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**The Factor Finder CD-ROM
User's Guide**

National Center for Environmental Assessment - Washington Office
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DISCLAIMER

This document and the Factor Finder program have been reviewed in accordance with U.S. Environmental Protection Agency policy and approved for publication. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

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PREFACE

The National Center for Environmental Assessment (NCEA), within the U.S. Environmental Protection Agency's (EPA) Office of Research and Development (ORD), developed the Factor Finder program to assist exposure assessors and others in searching and locating data contained in two previously published NCEA documents quickly and efficiently. The *Exposure Factors Handbook* (EFH) (EPA/600/P-95/002Fa, Fb, and Fc) published in August 1997, and the *Sociodemographic Data Used for Identifying Potentially Highly Exposed Populations* (HEP) (EPA/600R-99/060) published in July 1999, are valuable tools for exposure assessors, containing vast amounts of information, but time consuming for exposure assessors to find. In addition, data for a given population may be contained in both documents. The Factor Finder program was developed to help users quickly search and cross reference data contained in both documents for populations of interest to the user.

AUTHORS, CONTRIBUTORS, AND REVIEWERS

The National Center for Environmental Assessment (NCEA) within EPA's Office of Research and Development was responsible for the preparation of the Factor Finder program and Users Guide, both of which are being made available on a CD-ROM. Versar, Inc. developed the program under EPA Contract No. 68-W-99-041, Work Assignments 1-16 and 2-17. Amina Wilkins, of NCEA's Washington Office, served as the EPA Work Assignment Manager providing overall direction and coordination for the project as well as technical assistance and guidance.

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1. INTRODUCTION, SYSTEM REQUIREMENTS, AND INSTALLATION

The Exposure Factors Handbook (EFH) published in August 1997 (EPA/600/P-95/002Fa, Fb, and Fc) and Sociodemographic Data Used for Identifying Potentially Highly Exposed Populations (HEP) published in July 1999 (EPA/600R-99/060) are two NCEA products that are of great interest to risk assessors, risk managers, and communities concerned about exposure to environmental contaminants. The EFH provides guidance on selection of exposure factor values while the HEP helps assessors identify and enumerate populations that may experience greater exposures relative to the general population. Both documents, however, contain vast amounts of information including text and numerous tables, all of which can be time consuming and difficult to locate. The Factor Finder CD-ROM was developed to help users target specific data of concern from the EFH and the HEP documents. It provides a platform to perform user-friendly queries to search the contents of each document and to locate data of interest.

Users can either enter keywords into a user-defined search box or use pull-down menus to help pin-point specific information. The pull-down menu features general categories such as chemicals of concern, contaminated media, geographic region, exposure pathways and routes, age, food categories, and activities (along with other subcategories) to name just a few. Factor Finder searches both documents to retrieve the data specified by the user and displays the information on the user's personal computer (PC) screen.

1.1. FACTOR FINDER SYSTEM REQUIREMENTS

The Factor Finder CD-ROM requires the following hardware and software:

- CD-ROM drive,
- hard drive with at least 1 Mb of space for Factor Finder system files,
- Java 2.0, and
- Adobe Acrobat Reader version 3.0 or higher.

1.2. INSTALLATION

Installing Factor Finder is relatively simple and does not require more than a few minutes of time. Please refer to Appendix A for the installation procedures for different systems.

Factor Finder is written and compiled in Java 2.0, so that any platform can run it. If the system is equipped with a Windows 95 or higher platform, an installation package provided on the CD-ROM will install the Java Runtime Environment® (JRE) 2.0 from Sun Microsystems®. Otherwise, the Java Developer's Kit® (JDK) 2.0 can be downloaded free from the Sun or Apple® Internet sites.

The Factor Finder CD-ROM also contains the EFH and HEP in PDF format. The user must have Adobe Acrobat Reader® version 3.0 or higher to read these files. Acrobat Reader® can be obtained for free from the Adobe® Internet site. After the Factor Finder program is installed, Acrobat Reader® can be downloaded from the Factor Finder opening screen.

2. EXECUTION

2.1. FACTOR FINDER OPENING SCREEN

Once the user has begun to run Factor Finder, the opening screen (Figure 1) welcomes the user to Factor Finder. This screen has two menus and a number of buttons that allow access to various Internet sites, the EFH, the HEP, and Factor Finder.

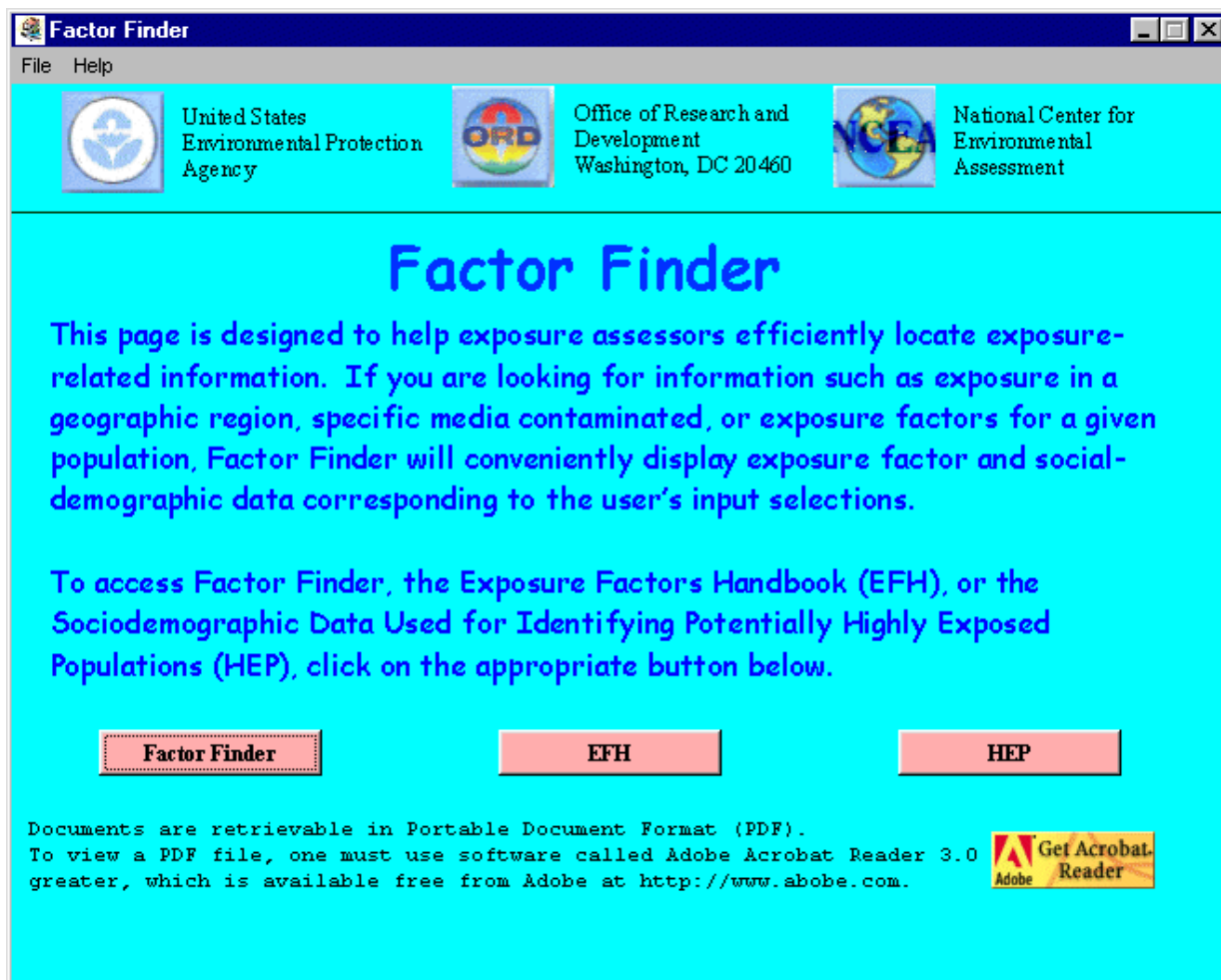


Figure 1 - Factor Finder Opening Screen

Menus - The Factor Finder opening screen has two menus, a *File* menu and a *Help* menu.

The *File* menu has a submenu selection that allows the user to exit Factor Finder (*Exit*).

The *Help* menu has two submenu selections: *Help*, which allows the user to access the Factor Finder help screens, and *About*, which displays a pop-up screen with information about Factor Finder's creation date and point of contact.

Internet Site Buttons - Four buttons on the opening screen allow the user to access various Internet sites, provided the user has Internet access. Three buttons, located across the top of the screen, allow the user to access the EPA, Office of Research and Development, and NCEA Internet sites. The fourth button, located at the bottom right of the screen, is the yellow "Get Acrobat Reader" button. In the event that the user does not have the Acrobat Reader® software installed on his/her PC, this button will transport the user to the Adobe® Internet site to download it.

Again, these buttons work only if the user has Internet access. Factor Finder will search for two popular Internet browsers, Internet Explorer® and Netscape®, on the user's system. If Factor Finder cannot locate either of these Internet browsers, it will prompt the user for the location of their Internet browser. Once inputted, Factor Finder will take the user to the selected Internet site.

Please note the graphics on the buttons linking to the Internet may disappear at times. However, the buttons remain fully functional, and the operation of Factor Finder is not affected.

EFH and HEP Buttons - These two buttons, located toward the bottom of the screen, open Adobe Acrobat Reader® and take the user to the EFH or the HEP. This feature is convenient if the user knows where the desired information is located and wants to access the documents quickly. If Factor Finder cannot locate Acrobat Reader®, the user will be prompted for its location before proceeding. Once the document is open, the user can navigate through the EFH or the HEP by clicking on the bookmarks located on the left-hand side of the document. Upon opening either document, the Acrobat Reader® search capability can be accessed through the find function (button with binoculars) on the tool bar. The user can perform searches limited to finding occurrences of a specific word or phrase throughout the text and tables of the selected document. Several tables are scanned images; thus the search function will not locate terms contained in these scanned tables. It is also important to note that the user can exit the documents at any time and return to Factor Finder by clicking on the "Return to Factor Finder" bookmark located in each document.

Factor Finder Button - The user should press this button to search the EFH and HEP using the Factor Finder search engine. The Factor Finder search engine differs from the Adobe Acrobat Reader® search index in that it searches the EFH and HEP tables only for criteria of

interest. The advantage of using the Factor Finder search engine is it considers and returns tables for terms similar in meaning to a user-entered word. For example, if the user inputs the term “African American,” Factor Finder will identify the tables that also mention “Black.” Not all synonyms can be accounted for however. Appendix A lists the synonyms used in Factor Finder grouped according to the predefined categories and qualifiers (subcategories).

To close Factor Finder, the user can select **Exit** from the **File** menu, click on the X box in the upper right-hand corner of the window, or click on the Factor Finder icon in the upper left-hand corner of the window and select “Close” from the appearing menu.

2.2. FACTOR FINDER SEARCH ENGINE SCREEN

After selecting the Factor Finder search engine, a new screen will appear (Figure 2.) This screen contains the following:

- two menus used for manipulating Factor Finder files and information,
- the search criteria section, and
- the results section.

Menus - The Factor Finder search engine screen has two menus, a **File** menu and a **Help** menu.

The **File** menu has several submenu selections which can be used to open Factor Finder files (**Open Query**), save Factor Finder files (**Save Results**), print Factor Finder searches and results (**Print Results**), and exit the Factor Finder search engine screen (**Exit**). Please note that the printing feature in Factor Finder is very slow and requires a large amount of printer memory. It is recommended that the user save their Factor Finder search criteria and results as a Factor Finder file, open the Factor Finder file in a word processing application, and print the file from the word processing application.

The **Help** menu allows the user to access the Factor Finder help screens.

Search Criteria Section - The search criteria section consists of the **Category** and **Qualifier** pull-down lists, the **Search for...** text box, and the **Add to Search**, **Submit Query**, and **Clear Query** buttons. These are the tools the user can use to build their search criteria. Factor

Finder conducts a case-insensitive search of the tables in the EFH and HEP based on the criteria the user selects and inputs.

The tables in the EFH and the HEP contain various categories under which the data have been grouped, i.e., many tables have data grouped by gender, either male, female, or both. The **Category** and **Qualifier** pull-down lists provide the user with a number of predetermined

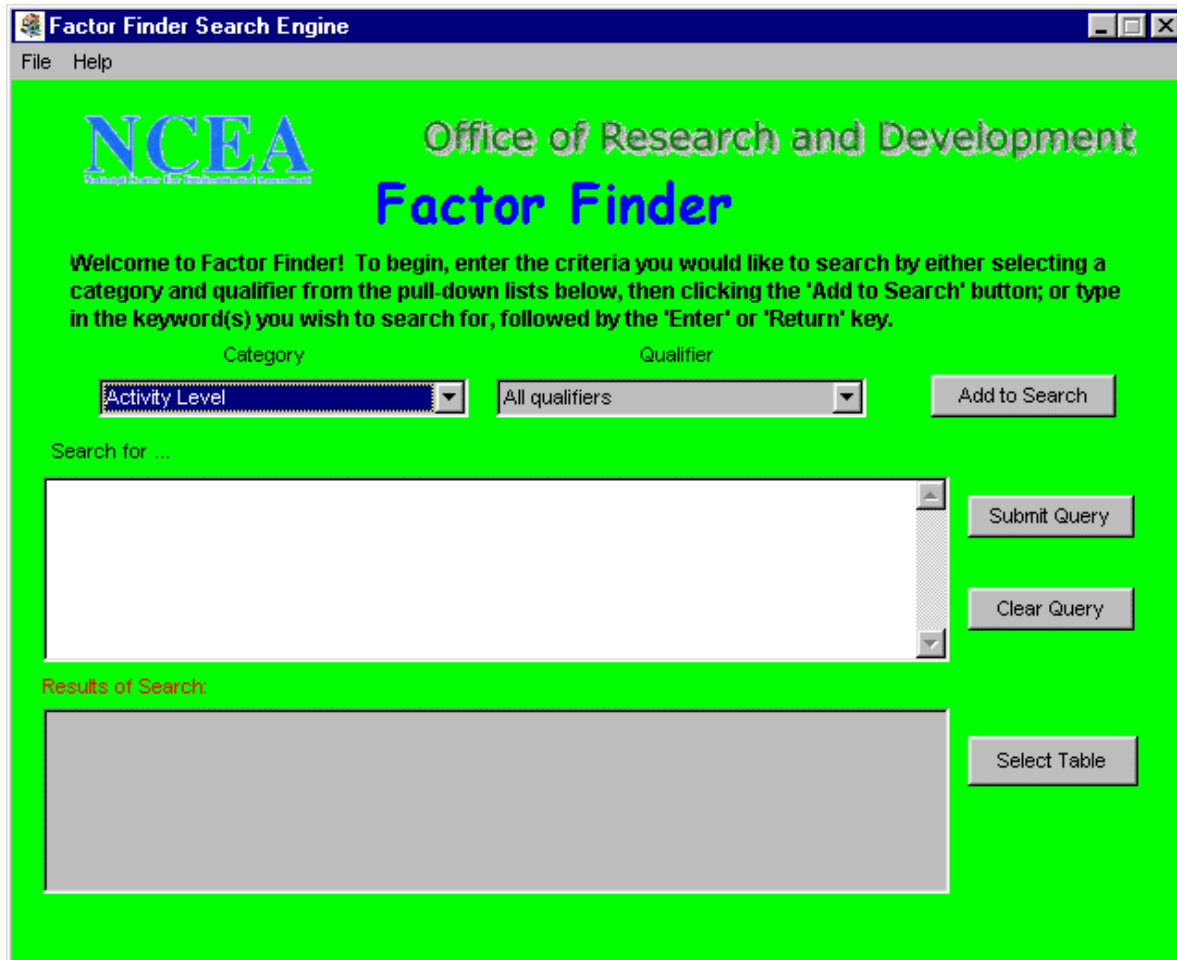


Figure 2 - Factor Finder Search Engine Screen

categories and subcategories (qualifiers) employed by tables in the EFH and the HEP. A list of synonyms for these categories and their corresponding qualifiers (subcategories) is provided in Appendix B. The user can highlight selections of these pull-down lists and press the *Add to Search* button to include these categories and qualifiers as search criteria in the *Search for...* text box. The category and qualifier will then appear in the *Search for...* text box with an equals sign between them, allowing Factor Finder to look in the tables where the category equals the qualifier.

If the user selects more than one category/qualifier pair, the word **OR** (in ALL CAPS) with a hard return will appear between each category/qualifier pair. For more information on the logic used in conducting Factor Finder searches, please refer to the Factor Finder Search Logic section of the user's guide.

The user also can enter words or phrases not contained in the *Category* and *Qualifier* pull-down lists as search criteria into the *Search for...* text box. To perform this, simply enter

the *Search for...* text box (by placing the cursor in the box) and start typing. Quotation marks are not necessary. If the user is searching for multiple words or phrases, separate the search terms with an **OR** or **AND** (in ALL CAPS) and a hard return. For instance, if the user were searching for the occurrence of “residence” or “male” in the same table, then the user would enter **residence OR**, hit the **Enter** key, and then type in **male** as the search criteria in the *Search for...* text box. For more information on the logic used in conducting Factor Finder searches, please refer to the Factor Finder Search Logic section of the user’s guide.

The user also can combine the use of category/qualifier pairs and user-input words and phrases by combining the steps discussed above for the different cases.

To remove or edit a category/qualifier pair from the search criteria, or to remove or edit user-input text, the user must enter the *Search for...* text box and delete the undesired text. To completely clear all of the criteria and results from a Factor Finder search run, press the *Clear Query* button.

NOTE: Input of search data by selecting categories and their corresponding qualifiers (category/qualifier pairs) from the pull-down menu may provide results that differ from those obtained using user-input words entered into the search box. The tables and figures of both documents were reviewed and key category/qualifier pairs were assigned based on this analysis. These category/qualifier pairs were placed in a database which is searched every time a user makes input selections from the pull-down menu. Text from the tables and figures of both documents also was placed in a separate searchable file. When a user opts to search the documents using a user-input word or phrase, Factor Finder searches this file for a match. Every effort has been made to reconcile differences between the two database files. The user can input data using either option. However, if a Factor Finder search using the category/qualifier pairs does not provide the user with the desired information, the user should try a Factor Finder search using user-input words.

Once the user has finished entering the search criteria, the user presses *Submit Query*, signaling Factor Finder to begin searching for the tables that meet the entered criteria.

Results Section - After Factor Finder has searched the tables in the EFH and the HEP for the required criteria, one of two events will occur: either Factor Finder will display a pop-up box indicating that there were no tables in either document that met the user’s criteria, or table numbers and table names will begin to appear in the *Results of Search* list.

If Factor Finder does not list any tables, the user is advised to make the search criteria more general (i.e., if the user is searching for **residence** and **male** in a table, the user should attempt searching for **residence** first and see what results occur.)

If results appear in the *Results of Search* list, the user can view a table by highlighting that table in the list and pressing the *Select Table* button. Factor Finder will then open Acrobat

Reader® and the selected table will appear. Each table will have three bookmarks listed to the left of the table. The first bookmark will refer to the main document (*EFH* or *HEP*) and, if clicked, will transport the user to the main document. The second bookmark is labeled *Discussion* and, if clicked, will transport the user to the section of the main document that discusses the data depicted in the table. The third bookmark is labeled *Return to Factor Finder* and, if clicked, will close Acrobat Reader® and bring Factor Finder to the top of the screen.

3. FACTOR FINDER SEARCH LOGIC

Factor Finder must use certain logic when multiple search criteria are entered to retrieve the correct information. Factor Finder uses the terms **AND** and **OR** (in ALL CAPS) along with the use of parentheses () to accomplish this.

- **AND** - used between two search terms instructs Factor Finder to look for tables where both terms appear.
- **OR** - used between two search terms instructs Factor Finder to look for tables where either term appears.
- **Parentheses ()** - used around two or more sets of search terms instructs Factor Finder to look for tables where the criteria inside the parentheses are met first, then search for the remaining criteria.

Parentheses are required for multiple criteria searches where AND and OR are used together. For instance, suppose a user entered the following search criteria:

**residence AND
yardwork OR
male**

Factor Finder could search for the appropriate tables in one of two ways:

1. Search for tables with either the terms **residence** and **yardwork**, or the term **male** in them.
2. Search for tables with the term **residence** and either the terms **yardwork** or **male** in them.

To alleviate this dilemma, the user should employ parentheses around the terms to search for first. Again, if the user wished to search for tables with either the terms **residence** and **yardwork**, or the term **male** in them, the user would enter the following into the *Search for...* text box:

**(residence AND
yardwork) OR
male**

If parentheses are not used, Factor Finder will group multiple criteria in order of occurrence.

APPENDIX A. FACTOR FINDER CATEGORIES AND QUALIFIERS (SUBCATEGORIES)

Category	Qualifiers	Category	Qualifiers	Category	Qualifiers
Season	Spring	State	Alabama	Employment	Full Time
	Summer		Alaska		Part Time
	Fall		Arizona		Not Employed
	Winter		Arkansas	Education	K-8
Region	North		California		High School
	South		Colorado		High School Graduate
	East		Connecticut		Undergraduate College
	West		Delaware		College Graduate
	Northeast		District of Columbia		Post Graduate
	Northwest		Florida	Dermal Area	Arm
	Southeast		Georgia		Hand
	Southwest		Hawaii		Trunk
Central	Idaho		Leg		
Gender	Male		Illinois		Head
	Female	Indiana	Feet		
Race	White	Iowa	Meat		Beef
	Black	Kansas		Poultry, Other	
	Hispanic	Kentucky		Pork	
	Asian	Louisiana		Game	
	Native American	Maine		Goat	
	Other	Maryland		Rabbit	
Urbanization	Central City	Massachusetts		Lamb	
	Nonmetropolitan	Michigan		Veal	
	Suburban	Minnesota		Turkey	
	Rural	Mississippi		Chicken	
Months	January	Missouri	Eggs		
	February	Montana	Dairy Products	Milk	
	March	Nebraska		Cheese	
	April	Nevada		Buttermilk	
	May	New Hampshire		Cream	
	June	New Jersey		Butter	
	July	New Mexico		Margarine	
	August	New York		Ice Cream	
	September	North Carolina		Sherbet	
	October	North Dakota	Yogurt		
	November	Ohio	Grain Products	Bread	
	December	Oklahoma		Sweets	
Income	User Input	Oregon		Snacks	
	Age	Pennsylvania		Breakfast Foods	
User Input		Rhode Island		Pasta	
Age Group	Adult (18-64 years)	South Carolina		Cooked Cereal	
	Adolescent (13-17 yr)	South Dakota		Rice	
	Child (1-12 years)	Tennessee		Ready-to-Eat Cereal	
	Infant (<1 year)	Texas		Baby Cereal	
	Senior (65+)	Utah		Oats	
Fluids / Drinks	Tap Water	Vermont	Wheat		
	Beer	Virginia	Corn		
	Cider	Washington	Rye		
	Wine	West Virginia	Barley		
	Cold Water	Wisconsin	Sorghum		
	Hot Water Drinks	Wyoming	Tracer Element - PICA	Aluminum	
	Coffee	Family Type		Single	Barium
	Tea			Married Couple	Manganese
	Hot Milk			Married w/ children	Silicon
	Cocoa	Single w/ children		Titanium	
	Fruit Juice			Vanadium	
	Milk			Yttrium	
	Mineral Water			Zirconium	
	Carbonated Drinks				
Breast Milk					

APPENDIX A. (Continued)

Category	Qualifiers	Category	Qualifiers	Category	Qualifiers
Vegetable	Artichoke	Fruit	Apple	Fish Type	Finfish
	Asparagus		Apricot		Anchovy
	Bean		Banana		Bass
	Beet		Blackberry		Bluefish
	Broccoli		Blueberry		Butterfish
	Brussels Sprout		Boysenberry		Carp
	Cabbage		Cantaloupe		Catfish
	Carrot		Casaba		Cod
	Cauliflower		Cherry		Croaker
	Celery		Crabapple		Dolphinfish
	Chard		Cranberry		Drum
	Corn		Currant		Flatfish
	Cucumber		Elderberry		Grouper
	Eggplant		Grapefruit		Haddock
	Herb		Grape		Halibut
	Kale		Honeydew		Herring
	Kohlrabi		Kiwi		Mackerel
	Leek		Kumquat		Monkfish
	Lettuce		Lemon		Mullet
	Okra		Lime		Ocean Perch
	Onion		Loganberry		Perch
	Oriental Vegetable		Melon		Pike
	Parsnip		Mulberry		Pollock
	Peanut		Nectarine		Rockfish
	Pea		Orange		Roughy
	Pepper		Peach		Salmon
	Potato		Pear		Sardine
Pumpkin	Pineapple	Sea Bass			
Radish	Plum	Seatrout			
Rhubarb	Quince	Shad			
	Raspberry	Shark			
	Strawberry	Snapper			
Spinach	Tangerine	Sole			
Squash	Watermelon	Sturgeon			
Sunflower	Fish Habitat	Freshwater	Sucker		
Sweet Potato		Estuarine	Sunfish		
Tomato		Marine	Swordfish		
Turnip	Chemicals of Concern	Arsenic	Trout		
Select Drugs / Substances	Cigarettes	Benzene	Tuna		
	Alcohol	Cadmium	Turbot		
	Marijuana	Chloroform	Whitefish		
	Cocaine	Chromium	Whiting		
	Smokeless Tobacco	Hexachlorobutadiene	Yellowtail		
	Crack	Lead	Shellfish		
	Inhalants	Mercury	Crab		
	Hallucinogenics	Pesticide	Crayfish		
	Stimulants	Polychlorinated Biphenyl	Lobster		
	Sedatives	Polycyclic Aromatic Hydrocarbon	Shrimp		
	Tranquilizers	Tetrachloroethylene	Clam		
	Analgesics	Trichloroethylene	Spiny Lobster		
		Vinyl Chloride	Mussel		
		Octopus			
		Oyster			
		Scallop			
		Squid			

APPENDIX A. (Continued)

Category	Qualifiers
Activity Level	Sedentary
	Light
	Moderate
	Heavy
	Severe
Activity Type	Employment
	Household Work
	Yard Work
	DIY Home Project
	Childcare
	Goods/Services
	Personal Care
	Education
	Organizational Activities
	Entertainment
	Athletics
	Recreation
	Passive Leisure
	Transit
Location	Home
	School
	Other Residence
	Shops
	In-transit
	Other
Microenvironment	Indoor - general
	Outdoor - general
	Vehicle
	Autoplace
	Restaurant
	Indoor - Physical
	Outdoor - Physical
	Work/study - residence
	Work/study - other
	Cooking
	Kitchen - other
	Chores
	Social
	Leisure/eat - indoor
	Sleep - indoor
Consumer Products	Cosmetic Hygiene
	Household Furnishings
	Garment Conditioning
	Household Maintenance
	Home Improvement
	Automobile-related
	Personal
Water Use	Shower or Bath
	Toilet
	Laundry
	Dishwashing
	Other

APPENDIX B. FACTOR FINDER LIST OF SYNONYMS

Category	Subcategory	Synonym
Race	Black	African American
Race	White	Caucasian
Race	Asian	Oriental
Race	Native American	Indian
Race	Native American	Eskimo
Race	Native American	Aleut
Race	Asian	Pacific
Race	Asian	Chinese
Race	Asian	Filipino
Race	Asian	Japanese
Race	Asian	Asian Indian
Race	Asian	Korean
Race	Asian	Vietnamese
Race	Asian	Laotian
Race	Asian	Cambodian
Race	Asian	Thai
Race	Asian	Hmong
Race	Asian	Pakistani
Race	Asian	Hawaiian
Race	Asian	Samoan
Race	Asian	Guamanian
Race	Hispanic	Mexican
Race	Hispanic	Puerto Rican
Race	Hispanic	Cuban
Gender	Female	Girl
Gender	Female	Woman
Gender	Male	Man
Gender	Male	Boy
Activity Level	Light	Not Very Active
Activity Level	Light	Not Active At All
Activity Level	Moderate	Somewhat Active
Activity Level	Moderate	Active
Activity Level	Heavy	Extremely Active
Activity Level	Heavy	Very Active
Activity Level	Light	Slow
Activity Level	Moderate	Medium
Activity Level	Heavy	Fast
Activity Level	Heavy	Hard
Activity Level	Sedentary	Sleep
Dermal Area	Trunk	Torso
Dermal Area	Leg	Thigh
Dermal Area	Leg	Calf
Dermal Area	Arm	Forearm
Region	Southeast	South Atlantic
Region	Northeast	New England
Region	East	Middle Atlantic
Region	Central	East North Central
Region	Central	West North Central
Region	Central	East South Central
Region	Central	Mountain

Region	West	Pacific
Region	Southwest	West South Central
Region	Central	Midwest
Urbanization	Suburban	Outside Central City, 500K - 1M
Urbanization	Central City	Central City, 500K - 1M
Urbanization	Suburban	Outside Central City, 1M - 2M
Urbanization	Central City	Central City, 1M - 2M
Urbanization	Suburban	Outside Central City, 2M or more
Urbanization	Suburban	Outside Central City, 250K - 500K
Urbanization	Rural	Rural, non-SMSA
Urbanization	Central City	Central City, 50K - 250K
Urbanization	Central City	Central City, 2M or more
Urbanization	Suburban	Outside Central City, 50K - 250K
Urbanization	Nonmetropolitan	Other Urban
Urbanization	Central City	Central City, 250K - 500K
Meat	Lamb	Sheep
Grain Products	Sweets	Cake
Grain Products	Sweets	Cupcake
Grain Products	Sweets	Cookie
Grain Products	Sweets	Pie
Grain Products	Sweets	Doughnut
Grain Products	Snacks	Cracker
Grain Products	Snacks	Popcorn
Grain Products	Snacks	Pretzel
Grain Products	Snacks	Corn-based Salty Snack
Grain Products	Snacks	Tortilla
Grain Products	Breakfast Foods	Pancake
Grain Products	Breakfast Foods	Waffle
Grain Products	Breakfast Foods	French toast
Grain Products	Bread	Roll
Activity Type	Education	School
Activity Type	Education	Studying
Activity Type	Passive Leisure	Visiting
Activity Type	Passive Leisure	TV
Activity Type	Passive Leisure	Reading
Activity Type	Passive Leisure	Household Conversations
Activity Type	Recreation	Hobbies
Activity Type	Recreation	Playing
Activity Type	Recreation	Sports
Activity Type	Employment	Paid Work
Activity Type	Personal Care	Bathing
Activity Type	Personal Care	Showering
Activity Type	Personal Care	Washing Hands
Chemical of Concern	Pesticide	Fungicide
Chemical of Concern	Pesticide	Insecticide
Chemical of Concern	Pesticide	Molluscicide
Chemical of Concern	Pesticide	Rodenticide
Chemical of Concern	Pesticide	Herbicide
Chemical of Concern	Pesticide	Disinfectant
Chemical of Concern	Pesticide	Repellent
Chemical of Concern	Pesticide	DDT
Chemical of Concern	Pesticide	Chlordane
Chemical of Concern	Pesticide	Aldrin
Chemical of Concern	Pesticide	Dieldrin

Chemical of Concern	Pesticide	Heptachlor
Chemical of Concern	Pesticide	Velsicol-1068
Chemical of Concern	Pesticide	Octachlor
Chemical of Concern	Pesticide	Chlorkil
Chemical of Concern	Pesticide	Ortho-chlor
Chemical of Concern	Pesticide	Dowchlor
Chemical of Concern	Pesticide	Gold Crest C100
Chemical of Concern	Pesticide	Topichlor 20
Chemical of Concern	Vinyl Chloride	Chloroethylene
Chemical of Concern	Vinyl Chloride	Chloroethene
Chemical of Concern	Vinyl Chloride	Monochloroethylene
Chemical of Concern	Vinyl Chloride	Ethylene Monochloride
Chemical of Concern	Vinyl Chloride	Monochloroethene
Chemical of Concern	Vinyl Chloride	VCM
Chemical of Concern	Vinyl Chloride	Vinyl Chloride Monomer
Chemical of Concern	Benzene	Benzol
Chemical of Concern	Benzene	Carbon Oil
Chemical of Concern	Benzene	Coal Tar Naphtha
Chemical of Concern	Benzene	Cyclohexatriene
Chemical of Concern	Benzene	Phenyl Hydride
Chemical of Concern	Benzene	Pyrobenzole
Chemical of Concern	Polychlorinated Biphenyl	PCB
Chemical of Concern	Polychlorinated Biphenyl	Arochlor
Chemical of Concern	Polychlorinated Biphenyl	Arochlor 1254
Chemical of Concern	Polychlorinated Biphenyl	Arochlor 1260
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	PAH
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	Acenaphthene
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	Acenaphthylene
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	Anthracene
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	Benz(a)anthracene
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	Benzo(a)pyrene
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	Benzo(b)fluoranthene
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	Benzo(g,h,i)perylene
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	Benzo(k)fluoranthene
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	Chrysene
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	Dibenz(a,h)anthracene
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	Fluoranthene
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	Fluorene
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	Indeno(1,2,2-cd)pyrene
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	Phenanthrene
Chemical of Concern	Polycyclic Aromatic Hydrocarbon	Pyrene
Chemical of Concern	Chloroform	Trichloromethane
Chemical of Concern	Chloroform	Methenyl Chloride
Chemical of Concern	Chloroform	Methane Trichloride
Chemical of Concern	Chloroform	Methyl Trichloride
Chemical of Concern	Chloroform	Formyl Trichloride
Chemical of Concern	Trichloroethylene	TCE
Chemical of Concern	Trichloroethylene	Trichloroethene
Chemical of Concern	Trichloroethylene	Ethylene Trichloride
Chemical of Concern	Trichloroethylene	1-Chloro-2,2-dichloroethylene
Chemical of Concern	Trichloroethylene	1,1-Dichloro-2-chloroethylene
Chemical of Concern	Trichloroethylene	1,1,2-Trichloroethylene
Chemical of Concern	Trichloroethylene	TRI
Chemical of Concern	Hexachlorobutadiene	HCBD
Chemical of Concern	Hexachlorobutadiene	Perchlorobutadiene
Chemical of Concern	Hexachlorobutadiene	Dolen-Pur

Chemical of Concern Tetrachloroethylene

Tetrachloroethene

APPENDIX C - INSTALLATION INSTRUCTIONS

INSTALLATION FOR WINDOWS 95 OR HIGHER PCs

Note: In the following instructions, D is used to designate your CD drive. Please change this letter if your CD drive is a different designation. Factor Finder was designed to work on a 800 x 600 resolution screen.

Factor Finder is a Java Version 2 program designed to run on your CD drive. The setup program discussed below installs an INI file in the Windows directory of your computer to let Factor Finder know where Acrobat Reader® is on your system. Factor Finder requires Acrobat Reader® to view the *Exposure Factors Handbook* (EFH) and the *Sociodemographic Data Used for Identifying Potentially Highly Exposed Populations* (HEP). If you do not have Acrobat Reader® on your computer, you can download it free of charge from Adobe's Internet site. Factor Finder also will provide you an opportunity to download Acrobat Reader® from the Adobe Internet site.

As mentioned above, Factor Finder is a Java Version 2 program. As such, your system must have Java 2 to run Factor Finder properly. The setup program contains Sun's Java Runtime Environment (JRE) for Windows, a compact version of Java 2. If you already have the JRE or Java 2 installed on your system, simply finish the Factor Finder installation and click Cancel during the JRE installation. The Factor Finder installation program will modify the AUTOEXEC.BAT file located on your hard drive to include the path for Java 2. If you decide to install the JRE in a directory other than the default directory or have Java 2 in a different location on your system, you will have to modify your AUTOEXEC.BAT file to reflect this. Java 2 and the JRE are available for other operating systems. Please see the Sun Internet site for more details.

STEP 1: How To Install Factor Finder

1. Insert the CD into the CD drive.
2. Go to the Start button and select Run.
3. At the prompt, type in
D:\setup.exe
4. Factor Finder will begin to install itself. Input the required information when prompted by the setup program.
5. After Factor Finder is installed, the JRE installation program will begin to install itself automatically. This program enables Factor Finder to function properly. Input the required information when prompted by the setup program.
6. Restart your computer so that changes made to your AUTOEXEC.BAT will take effect.

STEP 2: How to Install JRE

Note: You will need to perform this step only if the Factor Finder setup program does not perform properly or if a problem arose during installation in Step 1. To run this installation program:

1. Locate the ff directory on your CD.
2. Open the directory.
3. Double click the file
 jre1_2_2-001-win.exe
4. The JRE installation program will begin to install itself. Input the required information when prompted by the setup program.

STEP 3: How to Run Factor Finder

Note: Once the program is fully installed, you will always be able to initiate the program by following Step 3.

1. Click on the Factor Finder icon displayed on your desktop.

Printing Factor Finder

Factor Finder requires a large amount of memory to print the criteria and results of a particular search. This is an inherent problem with Java 2 and may result in extended periods of time to print relatively small documents or incomplete printing. A solution to this is to save the search as a file and then print the file from a word processing program (i.e., Notepad, Wordperfect, MS Word, etc.). The manufacturers of Java are aware of this shortcoming and are attempting to correct it.

INSTALLATION FOR UNIX SYSTEMS

Factor Finder is a Java Version 2 program designed to run on your CD drive. The setup program discussed below installs an INI file in your /usr/local/bin directory to let Factor Finder know where Acrobat Reader® is on your system. Factor Finder requires Acrobat Reader® to view the *Exposure Factors Handbook* (EFH) and the *Sociodemographic Data Used for Identifying Potentially Highly Exposed Populations* (HEP). If you do not have Acrobat Reader® on your computer, you can download it free of charge from Adobe's Internet site. Factor Finder also provide you an opportunity to download Acrobat Reader from the Adobe Internet site.

As mentioned above, Factor Finder is a Java Version 2 program. As such, your system must have Java 2 to run Factor Finder properly. Java Development Kit (JDK1.2) or Java Runtime Environment (JRE) can be downloaded from the Sun Internet site.

How to Set Up Factor Finder

Note: Usually, only a superuser has permission to copy files into your /usr/local/bin. If so, ask your system administrator to install it for you.)

1. The user needs Java Development Kit (JDK1.2) or Java Runtime Environment (JRE) to run Factor Finder. JDK or JRE can be downloaded from <http://java.sun.com/cgi-bin/java-ports.cgi>
(Please set the path for JDK before running Factor Finder.)
2. Copy factfind.ini from the CD to /usr/local/bin.
3. Factor Finder needs Acrobat Reader® to display pdf files. You can find out if your PC has the Acrobat Reader® (acroread or xpdf or others) by typing:
>where acroread (or xpdf)
or
>which acroread (or xpdf)
The system will display whether Acrobat Reader is found by:
>/usr/bin/acroread (or /usr/bin/xpdf)
>acroread: Command not found. (or xpdf: Command not found.)

/usr/bin is the directory where Acrobat Reader® is found. If the machine does not have Acrobat Reader®, you can download it from

<http://www.adobe.com/products/acrobat/readstep.html>

before running Factor Finder or download it when Fact Finder is running.

There are two ways to set up the path for Acrobat Reader®.

1. Type in the path for Acrobat Reader® in factfind.ini (make sure that you have permission to write to this file.)
[Unix] -----> [Unix]

- key1= key1=/usr/bin/acroread
2. Run Factor Finder to locate Acrobat Reader®. The program will write the path into factfind.ini after the you locate the reader. (If only a superuser has permission to write to /usr/local/bin, the permission will be denied for ordinary users.)

How to Run Factor Finder

1. For the first time user:
 - >cd
 - >mount /mnt/cdrom
 - >cp /mnt/cdrom/factfind_run
 - >factfind_run
2. For the experienced user:
 - >cd
 - >mount /mnt/cdrom
 - >factfind_run