Navy Environmental Health Center
Technical Manual October 1994

INDUSTRIAL HYGIENE INFORMATION MANAGEMENT SYSTEM (IHIMS)

NAVY ENVIRONMENTAL HEALTH CENTER

BUREAU OF MEDICINE AND SURGERY

INDUSTRIAL HYGIENE INFORMATION MANAGEMENT SYSTEM (IHIMS)

Published By
NAVY ENVIRONMENTAL HEALTH CENTER
2510 WALMER AVENUE
NORFOLK, VIRGINIA 23513-2617

OCTOBER 1994

Reviewed and approved in accordance
with SECNAVINST 5600.16A

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PREFACE

The Industrial Hygiene Information Management System (IHIMS) is a computer program enabling industrial hygienists to store and analyze sampling data, generate Standard Form (SF) 600s, exposure notification letters, and tables for reports.

The IHIMS program is on one 3.5" disk and ready for installation. It currently runs on dBase IV®. A runtime (compiled version) is also available if dBase IV® is not available at your location. This manual is the product of the Industrial Hygiene Computer Data Capture Committee.

Since the field of industrial hygiene is constantly changing, this program and manual will be updated/revised as required. Comments/recommendations to improve this program and manual are desired and welcome. Please forward your comments using Appendix 3.

TABLE OF CONTENTS

PREFACE i

TABLE OF CONTENTS iii

OVERVIEW vii

INSTALLATION INSTRUCTIONS ix

DEFINITIONS AND CONVENTIONS xi

SPECIAL NOTES xi

SECTION 1:

GETTING STARTED 1-1

AIR SAMPLE DATA ENTRY (BREATHING ZONE) 1-3
- BACKGROUND AND RESULTS 1-5
- RESULTS ONLY 1-17
- EDIT RESULTS 1-20
- TIME WEIGHTED AVERAGES 1-27
- AIR SAMPLE TABLE FOR REPORT 1-37
- AIR SAMPLE RESULT ANALYSIS/LIST 1-54
- PRINT AIR SAMPLE SF 600 1-64

SECTION 2:

NOISE DOSIMETRY DATA ENTRY 2-1
- ADD NEW RECORDS 2-3
- EDIT DATA 2-8
- STANDARD NOISE DOSIMETRY 2-11
- NOISE DOSIMETRY TABLE (GROUP) 2-21
- NOISE DOSIMETRY SUMMARY 2-26
- PRINT NOISE DOSIMETRY SF 600 2-31

SECTION 3:

GENERAL AREA DATA ENTRY 3-1
- ENTER GENERAL AREA SAMPLES 3-3
- EDIT GENERAL AREA SAMPLES 3-14
- GENERAL AREA SAMPLE TABLE 3-20

SECTION 4:

BULK/WIPE SAMPLE DATA ENTRY 4-1
ADD BULK DATA 4-3
EDIT BULK DATA 4-12
BULK SAMPLE TABLE 4-19
ADD WIPE DATA 4-24
EDIT WIPE DATA 4-32
WIPE SAMPLE TABLE 4-39

SECTION 5:

MISCELLANEOUS 5-1
TRANSFER 5-3
NOTIFICATION LETTERS 5-5
PACK DATABASES 5-8
QUALITY ASSURANCE 5-10
BACK UP DATA 5-22
LIST COMMANDS 5-24
LIST COMMAND AND SHOP 5-26

SECTION 6:

SATELLITE ENTRY 6-1

AIR SAMPLE DATA ENTRY (BREATHING ZONE) 6-2
BACKGROUND AND RESULTS 6-3
RESULTS ONLY 6-6

ENTER NOISE DOSIMETRY DATA ENTRY 6-8
ADD NEW DATA 6-9
EDIT DATA 6-12

GENERAL AREA DATA ENTRY 6-14
ENTER GENERAL AREA SAMPLES 6-15
EDIT GENERAL AREA SAMPLES 6-18

BULK/WIPE SAMPLE DATA ENTRY 6-20
ADD BULK DATA 6-22
EDIT BULK DATA 6-25
ADD WIPE DATA 6-27
EDIT WIPE DATA 6-31

MISCELLANEOUS 6-33

PRINT DATA 6-34

APPENDIX A:

OPCODE (OPERATION CODE) DICTIONARY A-1

APPENDIX B:

STRESSOR CODES (CAS NUMBERS) B-1

APPENDIX C:

COMMENT/RECOMMENDATION FORM C-1

OVERVIEW

AIR SAMPLING DATA ENTRY (BREATHING ZONE)

Use to enter breathing zone samples only. Background information and results entered, TWAs calculated, tables for reports, statistical analysis, and SF 600 are generated in this part of the program.

NOISE DOSIMETRY DATA ENTRY

Use to enter noise dosimetry samples. Background information, results and TWAs entered, tables for reports, statistical analysis, and SF 600 are generated in this part of the program.

GENERAL AREA DATA ENTRY

Use to enter general area samples only. Background information and results entered, and tables for reports are generated in this part of the program.

BULK/WIPE SAMPLE DATA ENTRY

Use to enter bulk and wipe samples only. Background information and results entered, and tables for reports are generated in this part of the program.

MISCELLANEOUS

Quality assurance, backup of data, notification letters, and transfer from satellite floppy disk performed in this section.

SATELLITE ENTRY

The satellite data entry routine is designed to allow data entry on computers other than the one holding the main database. This program can be used by clerical staff to enter data. Once the data are verified, they can be transferred to the main database by means of floppy disk. Typically, the application will reside on different computers. However, both programs can reside on the same computer.

INSTALLATION INSTRUCTIONS

There are two separate applications contained on the disk. The main application allows for both data entry and retrieval in a variety of formats, i.e., tables for reports, SF 600s, notification reports or ad hoc inquiries. The Satellite Data Entry routine is designed to allow data entry on computers other than the one holding the main data bases.

NSTALLATION FOR THOSE WITH DBASE IV®

A. **Preliminary Steps (IHIMS Main and Satellite)**

1. **AUTOEXEC.BAT**

Include statement- Set dbTMP=C:\dB4\TEMP

Ensure dBase directory is in Path Statement
e.g. Path=C:\dBase

2. **SUB-DIRECTORIES**

At C:\dBase
MD IHIMS (for IH Programs)

At C:\
MD dB4

At C:\dB4
MD Temp (to store dBase generated temp files)
MD Sbackup (for backup procedure)

3. **Config.db**

Using either the dBase text editor i.e., Modify Command or dBase Setup, add BUCKET=5 and eliminate Command=Assist from the Config.db.

B. **IHIMS Main Program**

INSTALLATION FROM 1 3.5" DISK

1. Get to C:\dBase\IHIMS. Insert disk in Drive A: or B:
   Type "Copy A:*.*" or "Copy B:*.*". Press "Enter".

2. After copying is complete start dBase while in the C:\dBase\IHIMS, i.e. type 'dbase' and press enter

3. At the dBase dot (.) prompt type "DO IHINSTAL". This program will generate the additional files and indexes required.

4. After this installation; to use the IHIMS main program, you will need to get into the dBase\IHIMS Directory. Start dBase IV® and get to the dot(.) prompt. At the dot(.) prompt, type DO IH_MAIN.

C. **Satellite**

1. To run program, type "DO SIH_MAIN", then press enter.

D. **Refer to the IHIMS Manual for Operating Instructions**.

DEFINITIONS AND CONVENTIONS:

1. Bold face type is used to indicate location of shadow bar.

2. "ENTER" means press the Enter/Return key.

3. < > Information in brackets is to be typed in and "Enter" pressed (the brackets are not to be typed).

4. This manual is set up in sections which follow the menus. Each function is then broken down into steps with examples.

SPECIAL NOTES:

1. Do not use the "ESC" key in the programs, unless otherwise instructed or in a data entry screen.

2. Do not use "PgUp" or "PgDn," unless otherwise instructed.

3. Insure computer date is set to the current date. Many IHIMS default dates use the current computer date.

4. "T" and "F," "Y" and "N" are logical fields. "T" and "Y" are equivalent, "F" and "N" are also equivalent. If entering a "T" produces no computer action, try "Y" for YES. The same is true for "F."

5. Ensure dBase IV® printer device and driver are correct for attached printer. System must be configured properly for dBase printer codes to signal the printer to change print sizes and fonts to generate tables.

6. Install <u>BUCKET=5</u> in config.db file.

SECTION 1

GETTING STARTED

The Industrial Hygiene Information Management System (IHIMS) should already be installed in a subdirectory of your DBASE IV® software, or in its own directory if using the compiled version.

-Step 1-

Start DBASE IV® from the IHIMS subdirectory, get to the dot (.) prompt. To use IHIMS, enter <DO IH_MAIN> at the dot (.) prompt.

If using the compiled version:

- From inside the IHIMS subdirectory enter <IHIMS>.

The following message will appear on the screen for approximately three seconds:

NAVY
INDUSTRIAL HYGIENE
INFORMATION MANAGEMENT SYSTEM (1994)
Version 1.1 October 1994

The IHIMS main menu will then be displayed:

IHIMS MAIN MENU

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE MISC QUIT

-Step 2-

The shadow bar is moved with the right and left cursor arrow keys to select the desired subject. At the bottom of the screen is a brief definition of the options available (broader definitions of the options start on page 3). Press "ENTER" to activate and display the pull down menu for the subject desired.

BREATHING ZONE

-Step 1-

From the "IHIMS MAIN MENU" with the shadow bar on "BREATHING ZONE," press "ENTER." The menu shown below will then be displayed.

BREATHING ZONE MENU

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE MISC QUIT

BREATHING ZONE SAMPLES

Enter Background/results
Enter Results Only
Edit Results
Enter/Edit Time Weighted Averages
Air Sample Table for Report
Air Sample Result Analysis/List
Print Air Sample SF 600s
==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

Brief descriptions of the 8 options from the "BREATHING ZONE" MENU are listed below.

Enter Background/ results

- Enter background sampling information. Results may also be entered if received from the laboratory. If results are not available, enter just background and CAS number(s) for stressor(s). When results are received, use "Enter Results Only" to enter results.

- For procedures to enter background and results, see Pg. 1-5.

- For entering just background information, before results are obtained, see Pg. 1-15.

Enter Results Only	- Enter results when background information has already been entered. Sample numbers are used to access data record, see Pg. 1-17.
Edit results	- Used to edit background and results data, see Pg. 1-20. - Add stressors not included during background entry, see Pg. 1-23. - Delete results, see Pg. 1-21.
Enter/Edit Time Weighted Averages	- Calculates TWA on sample results, see Pg. 1-27. - Edit TWAs, see Pg. 1-34. - Delete TWAs, see Pg. 1-35.
Air Sample Table for Report	- Generates a sample table sorted by Command and Shop (work center) for entry into survey report, see Pg. 1-37. - Generates table of one or more Commands and/or one or more Shops, see Pg. 1-50.
Air Sample Result Analysis/List	- Summary of TWAs and/or results for specified search criteria, see Pg. 1-54.
Print Air Sample SF 600s	- Prints SF 600s for medical records for the individuals sampled, see Pg. 1-64.
==> Exit to Main Menu	- Exits to Main Menu.

ENTER BACKGROUND/RESULTS

-Step 1-

Select BREATHING ZONE from the IHIMS MENU. The BREATHING ZONE MENU will be displayed as below:

BREATHING ZONE MENU

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE MISC QUIT
BREATHING ZONE SAMPLES

Enter Background/results
Enter Results Only
Edit Results
Enter/Edit Time Weighted Averages
Air Sample Table for Report
Air Sample Result Analysis/List
Print Air Sample SF 600s
==> Exit to Main Menu

Use the up and down cursor keys to choose an option from menu

-Step 2-

With the shadow bar on "Enter Background/results" as shown above, press "ENTER." The following screen will then be displayed.

```
 BREATHING ZONE AIR SAMPLE DATA ENTRY SCREEN        Date of Sampling:02/14/90
 Activity:_________________  Shop:_______________   Location:_______
NAME Last:_________________ First:_______________   SSN: ___-__-____
              Worksite:_____________________
             Job Title:_______________ (M)ilitary or (C)ivilian: C
                 Shift: 1
Frequency of Operation: 1    Duration of Operation: 1
Opcode:___-__-__
Respirator: ___-____  | Material(s) Used: |   Ventilation:
                      | 1_________________ |
                      | 2_________________ | Meet Specs ? Used ? N

              Sampler:___
       Sample Number:____-____
         Sample Type:__
                Task:___________________________
     Sample Duration:__0
          Date Sent:02/14/90       Date Analyzed:02/14/90  TAD? N

                        (field definitions appear here)
```

-Step 3-

Fill in the data fields. Field definitions are at the bottom of the screen. Expanded definitions are provided below.

NOTE: Date, Activity, Shop, Location, NAME Last & First, SSN/Badge (last 4), Worksite, Job Title, Opcode, Sampler, Sample Number, Task, and Sample Duration fields on this screen are mandatory. If left blank, pressing "ENTER" or trying to use the cursor keys to move out of the field, will sound a bell and display a message at the bottom of the screen. Once a field has been filled out, the cursor keys can be used to go back and change field information.

If the sample number entered matches one already in the database, a bell will sound and a message will appear stating this is a duplicate sample number. No two sample numbers can be exactly the same.

Date - Date of sample (MM/DD/YY). The default is the current system date.

Activity - Name of command where sample was collected (must always be the same for a specific command. Information sorted by command to produce tables, therefore the name used for a command must be exactly the same).

Shop - Shop name or code. (Like command, Shop must be entered exactly the same each time. Shop is used to sort information.)

Location - Location of shop (work center).

NAME Last - Last name of individual sampled.

First - First name of individual sampled.

SSN - The first 5 digits may be left blank but the last four digits of social security number must be entered.

Worksite - Location where sampling occurred. Include as much information as necessary to identify where sampled operation occurred.

Job Title - Job title of individual sampled.

(M)il or (C)iv - Individual sampled is military or civilian

Shift - Use number codes.
1 = Day 2 = Evening 3 = Night

Frequency of Operation - Use number codes.

1 = Daily	2 = 2-3 Times/Week
3 = Weekly	4 = 2-3 Times/Month
5 = Monthly	6 = 2-3 Times/year
7 = Yearly	8 = Special Occasions

Duration of Operation - Use number codes.

1 = < 1 Hour	2 = 1-4 Hours
3 = 4-8 Hours	4 = > 8 Hours

Opcode - Use IHFOM number codes. See appendix A for list of current operation codes.

After entering an "OPCODE," a description of the opcode will appear. If the description does not match the operation sampled, check Appendix A and enter the new/correct operation codes.

If a nonexsistent "OPCODE" is entered, the following message will appear: "NO SUCH NUMBER, TRY AGAIN." Press the space bar to clear and reenter.

If an illegal value is entered, a message will appear at the bottom of the screen.

Respirator - NIOSH 'TC' number for type of respiratory protection used. Enter "TC" number that describes the respirator (Ex: 21C-160). Pop up menus will then appear to allow a standardized description of the respirator type worn to be entered. Selections may be made from these pop up menus by placing the light bar on the desired selection and pressing ENTER, or, in the case of the Air Filtering Media pop up menu, the media type may be selected by pressing the corresponding letter of a choice.

The first pop up menu which will appear allows the Respirator Type to be selected. This menu is displayed below:

```
Respirator Type
---------------
Filtering
Supplied Air
Powered Air
Self-Contained
None Worn
```

After a selection is made, corresponding menus will follow based on the respirator type selected.

The following menus will appear after selecting 'Filtering':

Face Piece Type	Air Filtering Media Type
Half Face	a. Dust Fume Mist (DFM)
Full Face	b. Organic Vapor (OV)
	c. HEPA
	d. OV with Prefilter
	e. OV with HEPA
	f. Pesticide
	g. Other

If "g. Other" is selected as the air filtering media type, the following screen appears and the filter type may be entered:

```
Filter Type:_________________
```

The following menus will appear after selecting

'Supplied Air':

Face Piece Type	Air Delivery Type	Escape Provisions
Half Face	Continuous Flow	With Escape
Full Face	Pressure Demand	Without Escape
Helmet	Demand	
Hood		

The following menus will appear after selecting 'Powered Air':

Face Piece Type	Air Filtering Media Type
Half Face	a. Dust Fume Mist (DFM)
Full Face	b. Organic Vapor (OV)
Helmet	c. HEPA
Hood	d. OV with Prefilter
	e. OV with HEPA
	f. Pesticide
	g. Other

If "g. Other" is selected as the air filtering media type, the following screen appears and the filter type may be entered:

Filter Type:_____

The following menus will appear after selecting 'Self-Contained':

Face Piece Type	Air Delivery Type	Escape Provisions
Half Face	Continuous Flow	With Escape
Full Face	Pressure Demand	Without Escape
	Demand	

Material(s) Used - List material/chemical used. Space is provided for two materials.

Ventilation - Type of ventilation: General, Lateral Slot, etc. The following pop up menu will appear, after pressing "ENTER" in this data entry field, to allow a standardized description to be entered.

Selections may be made from this pop up menu by

placing the light bar on the desired selection and pressing "ENTER", or by pressing the corresponding letter of a choice.

Ventilation Types

a. Natural
b. General
c. Small Booth
d. Large Booth, nonwalk-in
e. Large Booth, walk-in
f. Canopy Hood
g. Glove Box
h. Laboratory Hood
i. Free Hanging
j. Lateral Slot
k. Push-Pull
l. Downdraft
m. Metalworking/Woodworking
n. Low volume-high velocity

Meet Specs - Based on observations or measurements, does the ventilation meet specifications? "Y" for yes; "N" for no; "U" for unknown.

Used - Default is "N" for no; "Y" for yes.

Sampler - Initials of individual doing the sampling (Industrial hygienist; Technician ; or other). Should be consistent for any individual.

Sample Number - Sample number is an eight character code divided into several parts. "TT90-0001" The "TT" is an alpha code to identify section/group collecting sample. The "90" is for the year. The "0001" is the number of the sample ranging from 0001 to 9999. If a given sample number has already been used, a bell will sound and message will appear at bottom of screen. Duplicate sample numbers will not be accepted.

Sample Type - BZ (breathing zone) is the default.

- BX Valid sample, however is not to be reported (show up on TWA screen or tables). Example: Simultaneous samples (one charcoal and one organic vapor badge) on same individual for the same time frame, only one set of data would be reported.

- XX if sample is determined to be invalid.

- BX and XX may be typed or press space bar to change.

Task - Further description of the job being performed (e.g., IND-011-08 [SMAW] is opcode; task may be on painted metal, confined space, or in barge). Standardization of task within your community may help future sorting.

Sample Duration - Sample time in minutes.

Date Sent - Date sample sent out for analysis.

Date Analyzed - Date lab analyzed (signature date).

Notice: "Date Sent" and "Date Analyzed" will have the current computer date displayed. These dates should be replaced with the actual dates samples are submitted and analyzed. Some fields are mandatory and must be completed. Other (optional) fields should be completed when/if the information is available.

TAD - Default is "N" for No - for this person is not TAD to the Command from which the sample was collected. "Y" or Yes - the employee sampled is not assigned to the Command from which the sample was collected. Entering "Y" will allow you to enter the parent Command from which the TAD employee came. SF-600 forms and notification letters will be generated based on the parent Command.

Example of a filled out data entry screen:

```
BREATHING ZONE AIR SAMPLE DATA ENTRY SCREEN      Date of Sampling:02/14/90
 Activity:NAVCOMMAND_____  Shop:WELDING__  Location:X-336_____
NAME Last:DOE___________ First:JOHN_____  SSN:___-__-0000
             Worksite:Z-310___________
             Job Title:WELDER______ (M)ilitary or (C)ivilian: C
                 Shift: 1
Frequency of Operation: 1    Duration of Operation: 3
 Opcode:IND-013-02 OXYGEN CUTTING
Respirator: 21C-160_   | Material(s) Used: |   Ventilation:
Air Purifying Half Face| 1LEAD____________ | Natural
HEPA Cartridge         | 2_________________ | Meet Specs Y Used Y
```

Sampler: **JEB**
Sample Number: **TT90-0001**
Sample Type: **BZ**
Task: **OXY CUT LEAD BARS_____**
Sample Duration: **250**
Date Sent: 02/14/90 Date Analyzed: 02/14/90 TAD? N

-Step 4-

After all information has been entered, the following screen will be displayed:

```
INDUSTRIAL HYGIENE RESULTS ENTRY SCREEN
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0001

CAS NUMBER    STRESSOR NAME                Q  RESULT  UNIT  OK

Enter the CAS number for the stressor being entered, press enter when finished
```

NOTE: The following procedure is used if background and results are being entered at the same time (sampling results have been received from the laboratory). If results have not been received and background only is being entered, skip to page 1-15, step 13, "IF RESULTS NOT AVAILABLE WHEN ENTERING BACKGROUND INFORMATION," for input sequence when results are not available.

-Step 5-

Enter the CAS number for the stressor sampled into the shadow box area. Stressor CAS numbers are listed in Appendix B.

-Step 6-

When the CAS number is entered and "ENTER" is pressed, the STRESSOR NAME will appear along with blank areas for Q (qualifier; <, >, or blank), RESULT, UNIT, and verifier (OK). UNIT will default to MG/M3 (all units are maintained as MG/M3 not PPM), however units should be changed to F/CC for asbestos. Enter qualifier, result and units. If entry is correct, press "ENTER" with the cursor under OK with the default Y for yes. If an error has been made enter "N" under OK and press "ENTER" to

reenter.

Example of filled out screen:

INDUSTRIAL HYGIENE RESULTS ENTRY SCREEN
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0001

CAS NUMBER	STRESSOR NAME	Q	RESULT	UNIT	OK
7439-92-1	LEAD	<	0.0020	MG/M3	Y

-Step 7-

The shadow box will appear for a second CAS number. A second CAS number can now be entered. The input sequence is the same as above (steps 5 & 6).

INDUSTRIAL HYGIENE RESULTS ENTRY SCREEN
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0001

CAS NUMBER	STRESSOR NAME	Q	RESULT	UNIT	OK
7439-92-1	LEAD	<	0.0020	MG/M3	Y
7440-36-0	ANTIMONY	<	0.0010	MG/M3	Y

-Step 8-

The shadow box will appear for a third CAS number (six CAS numbers may be entered). If no more CAS numbers are to be entered, press "ENTER" with the cursor in the shadow box to complete entry sequence.

-Step 9-

The next screen (EXIT screen) gives you several options:

PRESS RETURN TO CONTINUE ADDING RECORDS
C, TO CARRY DATA, OR X TO EXIT

Press "ENTER" to get another blank "INDUSTRIAL HYGIENE BREATHING ZONE AIR SAMPLE DATA ENTRY SCREEN." Fill in blank screen for the next sample the same as outlined in steps 3 through 8.

The "C" carry function carries all data fields to the next record except Sample Number, Sample Duration, and TC Number. Make changes as required or accept the data by pressing "ENTER" (this saves many key strokes and time. Continue to step 9 to utilize the carry function.

Pressing "X" will exit back to the BREATHING ZONE MENU.

-Step 10-

THE CARRY FUNCTION

NOTE: DO NOT USE THE "PgUp" OR PgDn" KEYS!

The following screen will be displayed if "C" for carry is pressed in step 9 after entering the above example.

```
BREATHING ZONE AIR SAMPLE DATA ENTRY SCREEN      Date of Sampling:02/14/90
 Activity:NAVCOMMAND_____  Shop:WELDING__  Location:X-336_____
NAME Last:DOE___________ First:JOHN_____  SSN:___-__-0000
             Worksite:Z-310___________
             Job Title:WELDER______ (M)ilitary or (C)ivilian: C
                 Shift: 1
Frequency of Operation: 1    Duration of Operation: 3
 Opcode:IND-013-02 OXYGEN CUTTING
Respirator:___-____     | Material(s) Used: |   Ventilation:
Air Purifying Half Face| 1LEAD___________ | Natural
HEPA Cartridge         | 2_______________ | Meet Specs Y Used Y

             Sampler:JEB
       Sample Number:____-____
         Sample Type:BZ
                Task:OXY CUT LEAD BARS_______
     Sample Duration:__0
           Date Sent:02/14/90       Date Analyzed:02/14/90 TAD? N
```

-Step 11-

Press "ENTER" to accept displayed data, or overtype with new/changed information.

Notice that Sample Number is blank and Sample Duration has a "0". These are the only differences between the original screen and the "C" carry screen. These two fields must be entered.

The results screen will be displayed after the "Date Analyzed" field is filled in or cursor through. Fill in "INDUSTRIAL HYGIENE RESULTS ENTRY SCREEN" as described in steps 4 through 8.

IF RESULTS NOT AVAILABLE WHEN ENTERING BACKGROUND INFORMATION

-Step 13-

After all background information has been entered, the following screen will be displayed:

INDUSTRIAL HYGIENE RESULTS ENTRY SCREEN
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0001

CAS NUMBER	STRESSOR NAME	Q	RESULT	UNIT	OK

Enter the CAS number for the stressor being entered, press enter when finished

-Step 14-

Enter the CAS number for the stressor sampled into the shadow box area. Stressor CAS numbers are listed in Appendix B.

When the CAS number is entered and "ENTER" is pressed, the STRESSOR NAME will appear along with blank areas for Q (qualifier, <, >, or blank), RESULT, UNIT, and OK (verifier). Press "ENTER" or cursor through the Q, RESULT, UNIT fields to get to the OK field. If the correct stressor name is displayed for the CAS number entered, press "ENTER" to accept the default "Y" for true under the OK field. If the CAS number does not match the STRESSOR NAME enter "N" for no under OK and press "ENTER" to clear; reenter correct CAS number.

Example of filled out screen:

INDUSTRIAL HYGIENE RESULTS ENTRY SCREEN
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0001

CAS NUMBER	STRESSOR NAME	Q	RESULT	UNIT	OK
7439-92-1	LEAD			MG/M3	Y

-Step 15-

The shadow box will appear for a second CAS number. A second CAS number can now be entered. The input sequence is the same as above.

INDUSTRIAL HYGIENE RESULTS ENTRY SCREEN
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0001

CAS NUMBER	STRESSOR NAME	Q	RESULT	UNIT	OK
7439-92-1	LEAD			MG/M3	Y
7440-36-0	ANTIMONY			MG/M3	Y

-Step 16-

The shadow box will appear for a third CAS number (six CAS numbers may be entered). If no more CAS numbers are to be entered, press "ENTER" with the cursor in the shadow box to complete entry sequence.

-Step 17-

The next screen (EXIT screen) gives you the three options, as in step 9, ("C" (carry), "ENTER" (new screen), or "X" to exit Background/Results procedure to the BREATHING ZONE MENU.

ENTER RESULTS ONLY

-Step 1-

Select BREATHING ZONE from the IHIMS MENU. The BREATHING ZONE MENU will be displayed:

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE MISC QUIT
BREATHING ZONE SAMPLES

Enter Background/results
Enter Results Only
Edit Results
Enter/Edit Time Weighted Averages
Air Sample Table for Report
Air Sample Result Analysis/List
Print Air Sample SF 600s
==> Exit to Main Menu

Use the up and down cursor keys to choose an option from menu

-Step 2-

With the shadow bar on "Enter Results Only" as shown above, press "ENTER." The following will be displayed on the screen:

SAMPLE NUMBER -

-Step 3-

Enter sample number. For this example we will use TT90-0001.

SAMPLE NUMBER **TT90-0001**

-Step 4-

After the Sample Number is entered, the following screen will be displayed:

```
                    SAMPLE NUMBER TT90-0001
     DATE SENT __/__/__             DATE ANALYZED __/__/__

    STRESSOR NAME                            Q   RESULT  UNIT  OK?
```

At the bottom of the screen there are instructions to "Enter date sample left office" and "Enter date sample analyzed." After the dates have been entered, the number of stressors analyzed under this Sample Number will be displayed below the dates entered and above the STRESSOR NAME.

Below the STRESSOR NAME, the individual stressors will be displayed with shadow boxes for entering the following: Q (qualifier <, >, or blank), RESULT, UNIT (defaults to MG/M3 may be changed to F/CC), and OK (verification that entry is correct). Field definitions are displayed at the bottom of the screen.

An example result entry screen is displayed below:

```
                    SAMPLE NUMBER TT90-0001
     DATE SENT 02/14/90             DATE ANALYZED 02/25/90

       THERE IS 1 STRESSOR FOR SAMPLE NUMBER TT90-0001

    STRESSOR NAME                            Q   RESULT  UNIT  OK?

    LEAD                                        0.0000  MG/M3  Y
```

-Step 5-

After the data are entered, a "Y" is displayed under the "OK?" ("OK" is marked "Y" as the default). If your entry is correct press "ENTER." If your entered data are incorrect, change the "Y" to "N" (for no), and reenter your results data.

A completed result screen is displayed below:

SAMPLE NUMBER TT90-0001

DATE SENT 02/14/90 DATE ANALYZED 02/25/90

THERE ARE 1 STRESSORS FOR SAMPLE NUMBER TT90-0001

STRESSOR NAME	Q	RESULT	UNIT	OK?
LEAD		0.0020	MG/M3	Y

-Step 6-

After all stressor results are entered for this sample number, the message "PRESS ENTER TO CONTINUE ENTERING SAMPLE RESULTS OR X TO EXIT" will appear at the bottom of the screen.

If return is pressed, the "SAMPLE NUMBER" screen will be displayed. Enter your next Sample Number and repeat steps 3 through 5.

SAMPLE NUMBER -

If "X" is entered, the BREATHING ZONE MENU will be displayed.

EDIT RESULTS

-Step 1-

Select BREATHING ZONE from the IHIMS MENU. The BREATHING ZONE menu will be displayed as below.

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE MISC QUIT
BREATHING ZONE SAMPLES

Enter Background/results
Enter Results Only
Edit Results
Enter/Edit Time Weighted Averages
Air Sample Table for Report
Air Sample Result Analysis/List
Print Air Sample SF 600s
==> Exit to Main Menu

Use the up and down cursor keys to choose an option from menu

-Step 2-

With the shadow bar on "Edit Results" as shown above, press "ENTER." The SAMPLE NUMBER EDIT screen will then be displayed.

BREATHING ZONE SAMPLE EDITING
ENTER SAMPLE NUMBER TO EDIT OR PRESS ENTER TO QUIT

Enter Sample Number to Edit -

-Step 3-

Enter sample number to be edited. Sample Number TT90-0001 will be used in this example.

BREATHING ZONE SAMPLE EDITING
ENTER SAMPLE NUMBER TO EDIT OR PRESS ENTER TO QUIT

Enter Sample Number to Edit TT90-0001

The first screen to be displayed will be the background data entry screen.

Example of a data edit screen.

```
BREATHING ZONE AIR SAMPLE DATA ENTRY SCREEN      Date of Sampling:02/14/90
 Activity:NAVCOMMAND_____  Shop:WELDING__  Location:X-336_____
NAME Last:DOE_____ First:JOHN_____  SSN:___-__-0000
             Worksite:Z-310_____
             Job Title:WELDER_____ (M)ilitary or (C)ivilian: C
                 Shift: 1
Frequency of Operation: 1    Duration of Operation: 3
 Opcode:IND-013-02 OXYGEN CUTTING
Respirator: 21C-160_   | Material(s) Used: |   Ventilation:
Air Purifying Half Face| 1LEAD_____ | Natural
HEPA Cartridge         | 2_____ | Meet Specs Y Used Y

             Sampler:JEB
       Sample Number:TT90-0001
         Sample Type:BZ
                Task:OXY CUT LEAD BARS_______
     Sample Duration:250
           Date Sent:02/14/90       Date Analyzed:02/14/90 TAD? N

       DELETE all information for this sample number ? N
```

-Step 4-

Data are accepted by pressing "ENTER" or using the up/down and the right/left cursor keys to pass through the data fields.

-Step 5-

After pressing "ENTER" or cursoring past the TAD field in the "INDUSTRIAL HYGIENE BREATHING ZONE AIR SAMPLE DATA EDIT SCREEN," the results edit screen will be displayed.

NOTE: ALL INFORMATION FOR THIS SAMPLE NUMBER MAY BE DELETED BY CHANGING THE DEFAULT "N" TO "Y." The database record will be marked for deletion, the information for this sample number will not be used to generate tables. The database will need to be "PACKed" (see step 17).

THERE IS ONE STRESSOR FOR SAMPLE NUMBER TT90-0001
Highlight desired record to edit then press ESC

SAMPLNUM	SUBSTANCE	QUALIFIER	RESULT	UNIT
TT90-0001	LEAD		0.0020	MG/M3

-Step 6-

For multiple stressors use the up and down cursor to highlight the desired stressor to be edited. When stressor to be edited is highlighted, press "ESC." The next screen will appear.

THERE IS ONE STRESSOR FOR SAMPLE NUMBER TT90-0001
Highlight desired record to edit then press ESC

SAMPLNUM	SUBSTANCE	QUALIFIER	RESULT	UNIT
TT90-0001	LEAD		0.0020	MG/M3

TT90-0001
CAS Number: 7439-92-1
Substance:
Qualifier: Result: 0.0020 Unit: MG/M3

Delete this Stressor ? N Edit More Stressors ? N

-Step 7-

Press "ENTER" or change the CAS Number if desired and then press"ENTER" to accept. The substance represented by the CAS Number will then be displayed. Press "ENTER" to accept the remaining field values or edit.

-Step 8-

"Delete this Stressor?" is set to default "N" for no.

If you wish to delete this record, change the default "N" to "Y." If field is changed to "Y" database will need to be "PACKed" (see Step 17).

-Step 9-

"Edit More Stressors" is set to default "N" for no.

If you wish to edit more stressor(s) collected under this same sample number, change the default "N" to "Y," press "ENTER" and the screen will be displayed again so that further corrections can be made following Steps 6 through 9.

If "ENTER" is pressed with the default "N" set, the BREATHING ZONE SAMPLE EDITING screen will be displayed.

-Step 10-

If no more stressor(s) require editing, press "ENTER." The ADD STRESSOR screen will be displayed.

```
Do you want to ADD a stressor to a sample number? N
```

-Step 11-

Pressing "ENTER" with the default "N" selected in the ADD STRESSOR returns you to the BREATHING ZONE MENU.

Changing the "N" to "Y" in the ADD STRESSOR screen will display the ENTER SAMPLE NUMBER TO ADD STRESSOR TO screen.

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO      -
```

-Step 12-

To add an additional stressor to a sample number already entered into the database, enter the sample number < TT90-0001 > to the "ENTER SAMPLE NUMBER TO ADD STRESSOR TO" screen. The following screen will be displayed.

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO  TT90-0001
```

```
          CAS Number:
   Substance:
   Qualifier:
      Result: 0.0000
        Unit: MG/M3

Adding more stressors to this sample number ? N
```

-Step 13-

Enter CAS Number of stressor to be added in the shadow box and press "ENTER." The substance represented by the CAS Number will be displayed as in the following.

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO  TT90-0001
```

```
          CAS Number: 7440-36-0
   Substance: ANTIMONY
   Qualifier:
      Result: 0.0000
        Unit: MG/M3

Adding more stressors to this nample number ? N
```

-Step 14-

Enter data into fields. An example is displayed below.

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO  TT90-0001

            CAS Number: 7440-36-0
      Substance: ANTIMONY
      Qualifier:
         Result: 0.0000
           Unit: MG/M3

Adding more stressors to this sample number ? N
```

-Step 15-

If you want to add additional stressors to this sample number, change the default "N" to "Y," follow steps 12 through 14.

If you do <u>not</u> want to add additional stressors to <u>this</u> sample number, leave "Adding more stressors to this sample number" at the default "N" and press "ENTER," and "Add stressors to a different sample number ? "N" will be displayed at the bottom of the screen as follows.

-Step 16-

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO  TT90-0001

            CAS Number: 7440-36-0
      Substance: ANTIMONY
      Qualifier:
         Result: 0.0000
           Unit: MG/M3

Adding more stressors to this sample sumber ? N
```

Add stressors to a different sample number ? N

If you want to add additional stressors to another sample number, change the default "N" to "Y." The ADD STRESSOR screen will be displayed again. Repeat process following Steps 12 through 15.

If you do not want to add an additional stressor to another sample number, leave "Add stressors to a different sample number" at the default "N" and press "ENTER." Press ENTER to continue editing records or X to exit will be displayed on the screen - press X to return to BZ Menu or "ENTER" and edit more records.

-Step 17-

If a record was selected for deletion the database will need to be "PACKed".

NOTE: "PACK" is a dBASE term, meaning records marked for deletion will be permanently removed from the database, and the database will be reordered.

Refer to the MISCELLANEOUS MENU for instructions on "PACKing."

TIME WEIGHTED AVERAGES

-Step 1-

Select BREATHING ZONE from the IHIMS MENU. The BREATHING ZONE MENU will be displayed as below.

```
BREATHING ZONE   DOSIMETRY   GENERAL AREA   BULK/WIPE   MISC   QUIT
BREATHING ZONE SAMPLES

Enter Background/results
Enter Results Only
Edit Results
Enter/Edit Time Weighted Averages
Air Sample Table for Report
Air Sample Result Analysis/List
Print Air Sample SF 600s
==> Exit to Main Menu

Use the up and down cursor keys to choose an option from menu
```

NOTE: Sampling results with "less than" values (<), and are below the action level, will be divided by the "square root of 2" in accordance with the Industrial Hygiene Field Operations Manual (IHFOM).

-Step 2-

With the shadow bar on "Enter/Edit Time Weighted Averages" as shown above, press "ENTER." The following TWA ENTRY screen will be displayed.

You may enter TWAs by
(S)ample number or (N)ame
Enter (S) or (N) or (X) to exit

If "S" is entered, a TWA SAMPLE NUMBER ENTRY screen will be displayed. Enter one of the sample numbers that pertains to the individual, for the date of interest.

ENTER SAMPLE NUMBER -

If "N" is entered, a TWA NAME ENTRY screen will be displayed. The information required for the name entry screen is: sampled individual's last name and last four digits of their social security number and date sample was taken.

TWA ENTRY SCREEN

ENTER LAST NAME

ENTER ID NUMBER

ENTER SAMPLE DATE 01/01/80

TWA ENTRY USING SAMPLE NUMBER

-Step 3A-

Enter "S" on the TWA ENTRY screen. The SAMPLE NUMBER ENTRY screen will be displayed.

```
ENTER SAMPLE NUMBER     -
```

Enter the sample number.

```
ENTER SAMPLE NUMBER TT90-0001
```

-OR-

TWA ENTRY USING NAME

-Step 3B-

Enter "N" on the TWA ENTRY screen. The NAME ENTRY screen will be displayed.

```
                TWA ENTRY SCREEN

ENTER LAST NAME

ENTER ID NUMBER

ENTER SAMPLE DATE  01/01/80
```

Enter the last name, last four digits of the social security number, and the date sample was taken.

```
                TWA ENTRY SCREEN

ENTER LAST NAME  DOE

ENTER ID NUMBER  0000
```

ENTER SAMPLE DATE **02/15/90**

NOTE: If the TWA has already been computed, the following message will appear on the screen.

```
"Data for employee: DOE collected on 15 February 90 has been entered
 Data previously entered will be displayed below
 Press any key to continue..."
```

Proceed to Step 6 if this screen appears.

If the TWA has not already been calculated, the TWA CALCULATION screen will be displayed as below.

Employee: DOE SSN/Badge Number: 0000 Sample Date 15 February 90

SAMPLE NUMBER	STRESSOR	TIME (MINUTES)	Q	RESULT	UNIT
TT90-0002	LEAD	50		0.0090	MG/M3
TT90-0003	LEAD	200		0.0040	MG/M3

TOTAL TIME (MINUTES)= 250

TWA CALCULATIONS

1. UNSAMPLED PERIOD = SAMPLED PERIOD
2. UNSAMPLED PERIOD = 0
3. SAMPLED PERIOD < WORK PERIOD
4. ENTER SELF CALCULATED TWA
5. NO TWA CALCULATED

ENTER CHOICE (1-4) 0

If the sampling result has a less than (<) value greater than the action level or a greater than (>) value, only choice 4 and 5 will be displayed.

TWA CALCULATION

4. ENTER SELF CALCULATED TWA
5. NO TWA CALCULATED

A < VALUE WAS GREATER THAN THE AL
OR THERE WAS A > VALUE, PRESS 4 OR 5 _

There are four options on how to calculate the TWA. Each method is demonstrated in Steps 4A, 4B, 4C, and 4D, respectively.

-Step 4A-

ENTER "1" for TWAs when the unsampled period equals the sampled period. The TWA will be calculated and displayed on the screen.

Employee: DOE SSN/Badge Number: 0000 Sample Date 15 February 90

SAMPLE NUMBER	STRESSOR	TIME (MINUTES)	Q	RESULT	UNIT
TT90-0002	LEAD	50		0.0090	MG/M3
TT90-0003	LEAD	200		0.0040	MG/M3

TOTAL TIME (MINUTES)= 250

TWA IS 0.0050 MG/M3

Press any key to continue...

-Step 4B-

Enter "2" for TWAs when the unsampled period equals 0. The TWA will be calculated and displayed on the screen.

Employee: DOE SSN/Badge Number: 0000 Sample Date 15 February 90

SAMPLE NUMBER	STRESSOR	TIME (MINUTES)	Q	RESULT	UNIT
TT90-0002	LEAD	50		0.0090	MG/M3
TT90-0003	LEAD	200		0.0040	MG/M3

TOTAL TIME (MINUTES)= 250

TWA IS 0.0026 MG/M3

Press any key to continue...

-Step 4C-

Enter "3" for TWAs when the sampled period is less than the work period. A screen will appear asking for the number of minutes to be used to calculate the TWA. The TWA will then be calculated and displayed on the screen.

Employee: DOE SSN/Badge Number: 0000 Sample Date 15 February 90

SAMPLE NUMBER	STRESSOR	TIME (MINUTES)	Q	RESULT	UNIT
TT90-0002	LEAD	50		0.0090	MG/M3
TT90-0003	LEAD	200		0.0040	MG/M3

TOTAL TIME (MINUTES)= 250

ENTER TIME IN MINUTES 0

The TWA will then be calculated and displayed on the screen based on the number of minutes entered. If 400 minutes were entered, the following screen with the calculated TWA will be displayed.

Employee: DOE SSN/Badge Number: 0000 Sample Date 15 February 90

SAMPLE NUMBER	STRESSOR	TIME (MINUTES)	Q	RESULT	UNIT
TT90-0002	LEAD	50		0.0090	MG/M3
TT90-0003	LEAD	200		0.0040	MG/M3

TOTAL TIME (MINUTES)= 250

ENTER TIME IN MINUTES 400

TWA IS 0.0042 MG/M3

Press any key to continue...

-Step 4D-

ENTER "4" for TWAs which are based on other criteria. The TWA will need to be calculated and entered. The following screen will be displayed.

```
  Employee: DOE  SSN/Badge Number: 0000 Sample Date 15 February 90
SAMPLE        STRESSOR                 TIME      Q   RESULT   UNIT
NUMBER                              (MINUTES)

TT90-0004     ASBESTOS                 240          0.0080    F/CC
TT90-0005     ASBESTOS                  30          0.0090    F/CC

                     TOTAL TIME (MINUTES)= 270

               ENTER TOTAL TIME IN MINUTES  0
               ENTER QUALIFIER ___
               ENTER TIME WEIGHTED AVERAGE   0.0000
```

An example of a self calculated TWA entry with a total time of 240 minutes and a TWA of 0.004 F/CC is displayed below.

```
  Employee: DOE  SSN/Badge Number: 0000 Sample Date 15 February 90
SAMPLE        STRESSOR                 TIME      Q   RESULT   UNIT
NUMBER                              (MINUTES)

TT90-0004     ASBESTOS                 240          0.0080    F/CC
TT90-0005     ASBESTOS                  30          0.0090    F/CC

                     TOTAL TIME (MINUTES)= 270

               ENTER TOTAL TIME IN MINUTES 240
               ENTER QUALIFIER ___
               ENTER TIME WEIGHTED AVERAGE   0.0040

Press any key to continue...
```

-Step 5-

After selecting 1, 2, 3, or 4 and entering TWA(s), the following message will be displayed on the screen after pressing any key as instructed.

```
PRESS "ENTER" TO CONTINUE ENTERING TWAs OR

X TO EXIT
```

Press "ENTER" to continue calculating TWAs. The TWA ENTRY screen will again be displayed.

Pressing "X" will exit you to the BREATHING ZONE Menu.

-Step 6-

TWA DATA PREVIOUSLY ENTERED
CHECK AND/OR EDIT

If TWA(s) have previously been entered, the following message will be displayed.

```
"Data for employee: DOE collected on 15 February 90 has been entered
 Data previously entered will be displayed below
 Press any key to continue..."
```

By pressing any key a window is displayed with the TWA(s) and stressors for the individual sampled on the specific day listed.

Highlight the desired record to edit, then press ESC

COMMAND	SHOP	DATE	LNAME	SUBSTANCE	TWA	OC
NAVCOMMAND	WELDING	02/15/90	DOE	ANTIMONY	0.0020	IH
NAVCOMMAND	WELDING	02/15/90	DOE	LEAD	0.0090	IH

-Step 7-

Highlight the record to be checked/edited by using the up or down cursor. With the shadow bar over the record to be checked/edited (LEAD in the following example) press "ESC." The TWA EDIT

DELETION screen will be displayed.

CAUTION: Cursoring up or down out of the window will result in the display of other records not related to the individual or date selected.

TWA EDIT DELETION SCREEN

```
  Command: NAVCOMMAND                Shop: WELDING
  Opcode : IND-013-02           Job Title: WELDER
NAME Last: DOE              First: JOHN       SSN:  0000
     Date: 02/15/90           Total Time: 50
Substance: LEAD                                Cas_No: 7439-92-1
Qualifier:            Time weighted Average:  0.0090

    Delete this TWA? N  EDIT MORE TWAs? N   Control-End when done
     Highlight the desired record to edit, then press ESC
```

COMMAND	SHOP	DATE	LNAME	SUBSTANCE	TWA	OC
NAVCOMMAND	WELDING	02/15/90	DOE	ANTIMONY	0.0020	IH
NAVCOMMAND	WELDING	02/15/90	DOE	LEAD	0.0090	IH

-Step 8-

Data may be edited or accepted by pressing "ENTER" or cursoring through the data field.

-Step 9-

Delete this TWA? N. Change the default "N" to "Y" if the record is to be deleted. If "Y" is entered, the record will be marked for deletion (the LEAD sample will be marked for deletion in this example).

Edit more TWAs? N. Change the default "N" to "Y" if more TWAs need to be edited - will return to window display of TWAs, Stressors and Individual.

-Step 10-

Press Control-End when all editing is complete. The REDO TWA screen will be displayed giving the opportunity to redo the TWAs. The REDO TWA screen is displayed on the following page.

Highlight the desired record to edit, then press ESC

COMMAND	SHOP	DATE	LNAME	SUBSTANCE	TWA	OC
NAVCOMMAND	WELDING	02/15/90	DOE	ANTIMONY	0.0020	IH
NAVCOMMAND	WELDING	02/15/90	DOE	LEAD	0.0090	IH

Do you want to redo TWAS (Y/N) ? N

-Step 11-

If "N" was selected, the "ENTER(S) OR (N) OR (X) TO EXIT" screen will de displayed. Pressing X will return to the BREATHING ZONE SAMPLE screen.

If "Y" is entered, because data has been changed, the TWA CALCULATION screen will be displayed as below.

Employee: DOE SSN/Badge Number: 0000 Sample Date 15 February 90

SAMPLE NUMBER	STRESSOR	TIME (MINUTES)	Q	RESULT	UNIT
TT90-0002	LEAD	50		0.0090	MG/M3
TT90-0003	LEAD	200		0.0040	MG/M3

TOTAL TIME (MINUTES)= 250

TWA CALCULATIONS

1. UNSAMPLED PERIOD = SAMPLED PERIOD
2. UNSAMPLED PERIOD = 0
3. SAMPLED PERIOD < WORK PERIOD
4. OTHER

ENTER CHOICE (1-4) 0

-Step 12-

Redo TWA(s) as described previously following Steps 3 through 5.

AIR SAMPLE TABLE
FOR REPORT

This menu selection provides a means to generate standard tables for enclosure into industrial hygiene survey reports. The tables provide sampling results and TWAs for specific Commands/ Activities and Shops. Stressor, Location, and Work Task can be used to further define the table. Summaries of results and TWAs with their applicable exposure standards may be generated with or without the tables.

-Step 1-

Select **BREATHING ZONE** from the IHIMS MENU. The BREATHING ZONE MENU will be displayed as below.

BREATHING ZONE MENU

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE MISC QUIT
BREATHING ZONE SAMPLES

Enter Background/results
Enter Results Only
Edit Results
Enter/Edit Time Weighted Averages
Air Sample Table for Report
Air Sample Result Analysis/List
Print Air Sample SF 600s
==> Exit to Main Menu

Use the up and down cursor keys to choose an option from menu

-Step 2-

With the shadow bar on "**Air Sample Table for Report**" (as shown above), press "ENTER." You will be prompted to choose either a (S)ingle Command/Shop configuration or a (M)ultiple Command/Shop configuration.

(S)ingle or (M)ultiple Command or Shop ?

Press S for Single Command and Shop or M, for Multiple Command

Pressing **(S)**ingle will result in the following screen:

```
              BREATHING ZONE AIR SAMPLE TABLE
_____________________________________________________________________

      Command:_______________              Shop:____________

 First Opcode:___-___-__          Second Opcode:___-___-__

       Shop Location:_____________ Include only this location ? N
            Worksite:_____________
          CAS Number:_____________
                Task:_____________
Include samples after what date? 01/01/80

        Table Number:_______
         Table Title:_________________________

   Current Summary ? N
Historical Summary ? N Starting Date for Summary: 01/01/80
    Summaries only ? N

_____________________________________________________________________
                    (field definitions appear here)
```

Pressing **(M)**ultiple will result in this screen:

```
              BREATHING ZONE AIR SAMPLE TABLE
_____________________________________________________________________

First Command:_______________     Second Command:_______________
   First Shop:_______________        Second Shop:_______________
 First Opcode:___-___-__           Second Opcode:___-___-__

       Shop Location:_____________ Include only this location ? N
            Worksite:_____________
          CAS Number:_____________
                Task:_____________
Include samples after what date? 01/01/80

        Table Number:_______
         Table Title:_________________________

    Current Summary ? N
 Historical Summary ? N Starting Date for Summary: 01/01/80
     Summaries only ? N

_____________________________________________________________________
                    (field definitions appear here)
```

Expanded definitions are listed below:

Enter Command - Enter name of command. The first command field is mandatory. Command must match exactly the command entered into the database.

Enter Second Command - For Multiple COMMAND/SHOP only. Enter second command (in computer number order). This field is optional, enter if second command data are to be listed with the first command entered.

NOTE: **All commands will be included in the table that fall between the first command and the second command entered. Example: if VF 102 is the first command and VF 40 is the second, all commands between VF 102 and VF 40 would be included (e.g., VF 103, VF 39, etc.).**

Enter Shop - Enter the Shop name. This field is mandatory. Shop data from the command(s) entered will be included in the table generated.

Enter Second Shop - For Multiple COMMAND/SHOP only. Enter second shop (in computer number order). This field is optional, enter if second shop data are to be listed with the command(s) and other shop entered.

NOTE: **All shops will be included in the table that fall between the first shop and the second shop entered. Example: if the carpenter shop is the first shop and the HT shop is the second, all shops between the carpenter and HT shop would be listed (e.g., electric, electronics, etc.).**

Enter First Opcode - Enter "OPCODE" from Appendix A for operation of interest. The first three alpha characters and second three numerical digits are required to generate a table. The last two digits can be used to make the table more specific. "OPCODE" will appear in table heading.

Enter Second Opcode	-	Enter second "OPCODE" if more than one operations data are to be presented in the table. An example: if lead exposures were to be presented in one table for a paint and prep operation. The "OPCODE" for Painting, Spray, Compressed Air (IND-005-01) would be entered for the First Opcode and the Second Opcode for Metal Cleaning Mechanical, Sanding (IND-001-11) would be entered. If it did not matter what type of Painting and Metal Cleaning Mechanical procedures were important, the "OPCODEs" could have been entered IND-005 and IND-001 respectively. Will appear in TABLE HEADING.
Shop Location	-	Enter location of work center. It will appear in the table.
Include only this location?	-	If default "N" is changed to "Y," only those samples where the location matches the location entered for the sample will be printed out.
Worksite	-	Enter location where samples were collected, if only this worksite is to be included in the table.
Stressor CAS_NO	-	Enter CAS Number, from Appendix B, if only this stressor is to be included in the table.
Task	-	Enter task if you want the table to only list results that meet the specific task entered.
Include samples after what date	-	Only samples taken after the date entered will be listed or summarized in the table.
Table Number	-	Enter the table number you want for your report, it will appear at the top of the table.
Table Title	-	Enter the title you want for your table, it will appear in the table. The table title can be 30 characters long.

Current Summary	-	If default "N" is changed to "Y," a summary will be generated for the samples taken after the date entered above.
Historical Summary	-	If default "N" is changed to "Y," a summary will be generated for all samples taken, which meet the criteria entered above.
Starting Date Historical Summary	-	Date after which data will be included into Historical Summary.
Summaries only	-	If the default "N" is changed to "Y," only summaries will be generated. No individual results will be listed.

-Step 3-

Fill in fields with desired criteria to sort and generate your table. Command, Shop, and First Opcode are mandatory fields and must be entered. Table Number, Table Title, and Location are optional fields and serve to better describe the table being generated. Worksite, Stressor CAS_NO and Task are used to further limit the range of information that will be provided in the table (making the table more specific). Several examples of filled out AIR SAMPLE TABLE INFORMATION screens and TABLES are provided below.

-Step 4-

After "Y" or "N" is selected for "Summaries only ?" the following message will appear on the screen:

Working on the TABLE, It'll take a minute

If the search fails, this message will appear:

No records selected, try again

Press any key to continue....

-Step 5-

After a period of time (dependent on the search criteria), the following menu will appear.

Print Table From Dbase

Create WordPerfect File

Browse Results for Table

Do Another Table

==>Exit to BREATHING ZONE

Use up and down arrow keys to select option

Use the arrow keys to select an option. The **Print Table from Dbase** option prints the Table directly, the **Create WordPerfect File (ASCII)**, creates an ASCII file that will be converted to a WordPerfect format if retrieved in WordPerfect after it is generated. **Browse Results for Table**, permits observation of the samples generated by the search criteria; it also allows editing and deletion. Actions taken while in the Browse mode in this application have no effect on the main database. The **Do Another Table** option is to be used to generate a table based on different search criteria. Each of the options will be discussed briefly and examples given.

-Print Table from Dbase

If the printer is not on line, this message will appear:

Be sure printer is ON

Press any key to continue...

Press any key and the table will print. A description of the Table format follows:

TABLE EX-1
RESULTS OF AIR SAMPLING FOR
EXAMPLE 1 (IND-013-02)
NAVCOMMAND
SHOP WELDING
X-336

EMPLOYEE NAME/ ID	TASK/ OPERATION CODE	STRESSOR NAME/ WORKSITE	SAMPLE # DATE	SAMPLE TIME	RESULT (mg/m^3)	8-HR TWA (mg/m^3)
J. DOE 0000	OXYGEN CUTTING IND-013-02	LEAD Z-310	TT90-0002 05/29/91	410 410**	< 0.0022	< 0.0019
J. DOE 0000	OXY BURNING/CUTTING IND-013-02	LEAD Z-310	TT90-0003 09/27/91	375 375**	< 0.0037	< 0.0029

"*" The reported value exceeded an OSHA or ACGIH Standard
"**" The exposure time used to calculate 8-Hr TWA

The first information printed is the **table Header**. Information in the **table header** differs between the **(S)**ingle and **(M)**ultiple options. The **(S)**ingle **table header** identifies the Command and Shop while the **(M)**ultiple does not. Both formats include the Opcode(s) chosen, the Table Title and Location, if given.

The Column Headings identify the information provided in the body of the Table. The first line of information in the table provides the **employee name**, the **work task, stressor**, the **sample number**, the **duration of the sampling**, and the sample **result**.

A TWA may be comprised of a number of samples. All results pertaining to a specific individual on a given day will be presented together. When this occurs, the lines following will consist of the **work task**, **sample number**, **duration of sampling** and the sample **result**.

The last line of information provides the employee **ID** Number, the **OPCODE**, the **worksite**, the **date of the sampling**, **total** TWA calculation **time**, and the **TWA** for this stressor. In the **(M)**ultiple option the **Command/Shop** is given in place of worksite. A single sample number may have been analyzed for several stressors. Each stressor result will be presented separately.

The symbol "*" with the TWA indicates the reported value exceeded the OSHA or ACGIH standard. The "**" indicates time used to calculate the 8 Hour TWA.

CURRENT SURVEY TIME WEIGHTED AVERAGE SUMMARY
SAMPLES COLLECTED ON 15 FEBRUARY 90 TO 11 APRIL 90

STRESSOR NAME	NUMBER OF SAMPLES	TWA RANGE (mg/m³)	PEL 8-HR TWA (mg/m³)	PEL STEL (mg/m³)	PEL CEILING (mg/m³)	TLV 8-HR TWA (mg/m³)	TLV STEL (mg/m³)	TLV CEILING (mg/m³)
LEAD	3	0.0006-0.0500	0.05	-----	-----	0.15	------	------
ANTIMONY	2	0.0010-0.0060	0.5	-----	-----	0.5	------	------

The "**CURRENT**" summary summarizes data collected after the date entered in the "**Include samples after what date**" field in the "AIR SAMPLE TABLE INFORMATION" screen.

The summary header provides the time frame of the information provided in the table.

The summary includes name of stressor, number of TWAs (i.e., samples) taken during the time frame requested, the range of TWAs, and the applicable standards.

HISTORICAL TIME WEIGHTED AVERAGE SUMMARY
SAMPLES COLLECTED ON 28 FEBRUARY 88 TO 11 APRIL 90

STRESSOR NAME	NUMBER OF SAMPLES	TWA RANGE (mg/m³)	PEL 8-HR TWA (mg/m³)	PEL STEL (mg/m³)	PEL CEILING (mg/m³)	TLV 8-HR TWA (mg/m³)	TLV STEL (mg/m³)	TLV CEILING (mg/m³)
LEAD	5	0.0006-0.0500	0.05	-----	-----	0.15	------	------
ANTIMONY	4	0.0010-0.0100	0.5	-----	-----	0.5	------	------

The "**HISTORICAL**" summary provides information on samples collected in the specific Command/Shop entered in the "AIR SAMPLE TABLE INFORMATION" screen. Data included will be from the "**Starting Date for Historical Summary:**," the default being "01/01/80" to the present date.

The summary header provides the time frame of the information provided in the table.

The summary includes name of stressor, number of samples taken during the time frame requested, the range of TWAs, and the applicable standards.

Another Example of **(S)**ingle Command Shop follows:

BREATHING ZONE AIR SAMPLE TABLE

Command:**PWC**_____ Shop:**WC 539**_____

First Opcode:**IND-011-08** Second Opcode:___-___-__

Shop Location:**X-366**_____ Include only this location ? N
Worksite:_____
CAS Number:_____
Task:_____
Include samples after what date? **01/01/90**

Table Number:**2**_____
Table Title:**SHIELDED METAL ARC WELDING**

Current Summary ? **Y**
Historical Summary **Y** Starting Date for Summary: 01/01/80
Summaries only ? N

(field definitions appear here)

The **Command** and **Shop** chosen is **PWC**, **WC 539**. The **First Opcode** is "**IND-011-08**", SHIELDED METAL ARC WELDING. The Second Opcode was left blank, because only samples where individuals performing SHIELDED METAL ARC WELDING (IND-011-08) are desired. If a second operation was to be included in the table, a second opcode would have been entered.

The default "**N**" was not changed for "**Only this location**," therefore, the table will not be location specific.

Worksite is left blank, therefore, all sample locations will appear in the table.

Stressor CAS_NO is left blank, therefore, all stressors for PWC, WC 539, SHIELDED METAL ARC WELDING, IND-011-08 will be listed in our table. If, for example, you only wanted lead, then you would enter the CAS Number for lead (7439-92-1) into the stressor CAS_NO field and only samples for lead would be listed in the table. See the Multiple Command Shop example.

Task is also left blank, therefore all tasks will be listed in our table. If under SHIELDED METAL ARC WELDING we had established WELD STAINLESS and WELD MILD STEEL as different tasks, then we could now separate these tasks by entering one in the task field.

With the date **01/01/90** entered, only the samples taken after this date will be listed on our table.

Changing the default "N" to "**Y**" will result in a Current Summary being generated for the samples listed in our table.

Changing the default "N" to "**Y**" will result in a Historical Summary being generated for all samples that meet the criteria entered.

The default "N" is not changed; we want more than just summaries for now. TABLE 2 as defined above is displayed on the following page.

TABLE 2
RESULTS OF AIR SAMPLING FOR
SHIELDED METAL ARC WELDING (IND-011-08)
NAVY PUBLIC WORKS CENTER NORFOLK
SHOP WC 539
BUILDING X-336

EMPLOYEE NAME/ ID	TASK/ OPERATION CODE	STRESSOR NAME/ WORKSITE	SAMPLE#/ DATE	SAMPLE TIME	RESULT (mg/m^3)	8-HR TWA (mg/m^3)
M. BACON 0000	SMAW IND-011-08	LEAD Z-310	SP90-0153 02/28/90	355 355**	< 0.0027	< 0.0020
M. BACON 0000	SMAW IND-011-08	WELDING FUMES (NOC), TOTAL PARTICULATE Z-310	SP90-0153 02/28/90	355 355**	< 0.1300	< 0.0961
W. DOWER 0000	SMAW IND-011-08	LEAD Z-310	SP90-0154 02/28/90	357 357**	0.0081	0.0060
W. DOWER 0000	SMAW IND-011-08	WELDING FUMES (NOC), TOTAL PARTICULATE Z-310	SP90-0154 02/28/90	357 357**	0.3900	0.2901
W. DOWER 0000	SMAW IN BARGE IND-011-08	CADMIUM OXIDE FUME (As Cd) W-143	SP90-0263 04/02/90	360 360**	0.0012	0.0009
W. DOWER 0000	SMAW IN BARGE IND-011-08	IRON OXIDE DUST AND FUME (As Fe2O3) W-143	SP90-0263 04/02/90	360 360**	0.5460	0.4095
W. DOWER 0000	SMAW IN BARGE IND-011-08	IRON OXIDE DUST AND FUME (As Fe) W-143	SP90-0263 04/02/90	360 360**	0.3900	0.2925
W. DOWER 0000	SMAW IN BARGE IND-011-08	ZINC OXIDE FUME (As ZnO) W-143	SP90-0263 04/02/90	360 360**	1.3	0.9900
W. DOWER 0000	SMAW IN BARGE IND-011-08	VANADIUM RESPIRABLE DUST/FUME (AS V2O5) W-143	SP90-0263 04/02/90	360 360**	< 0.0013	< 0.0010
W. DOWER 0000	SMAW IN BARGE IND-011-08	LEAD W-143	SP90-0263 04/02/90	360 360**	4.8	3.6 *
W. DOWER 0000	SMAW IN BARGE IND-011-08	MANGANESE FUME (As Mn) W-143	SP90-0263 04/02/90	360 360**	0.0064	0.0048
W. DOWER 0000	SMAW IN BARGE IND-011-08	NICKEL METAL AND INSOLUBLE COMPOUNDS W-143	SP90-0263 04/02/90	360 360**	0.0022	0.0017

"*" The reported value exceeded an OSHA or ACGIH standard
"**" The exposure time used to calculate 8-HR TWA

TABLE 2 is continued on the following page

TABLE 2
RESULTS OF AIR SAMPLING FOR
SHIELDED METAL ARC WELDING (IND-011-08)
NAVY PUBLIC WORKS CENTER NORFOLK
SHOP WC 539
BUILDING X-336

EMPLOYEE NAME/ ID	TASK OPERATION CODE	STRESSOR NAME	SAMPLE# DATE	SAMPLE TIME	RESULT (mg/m^3)	8-HR TWA (mg/m^3)
W. DOWER 0000	SMAW IN BARGE IND-011-08	CHROMIUM METAL (As Cr) W-143	SP90-0263 04/02/90	360 360**	0.0041	0.0031
W. DOWER 0000	SMAW IN BARGE IND-011-08	COBALT W-143	SP90-0263 04/02/90	360 360**	< 0.0007	< 0.0005

"*" The reported value exceeded an OSHA or ACGIH standard
"**" The exposure time used to calculate 8-HR TWA

CURRENT SURVEY TIME WEIGHTED AVERAGE SUMMARY
SAMPLES COLLECTED 28 FEBRUARY 90 TO 2 APRIL 90

STRESSOR NAME	NUMBER OF SAMPLES	TWA RANGE (mg/m^3)	PEL 8-HR TWA (mg/m^3)	PEL STEL (mg/m^3)	PEL CEILING (mg/m^3)	TLV 8-HR TWA (mg/m^3)	TLV STEL (mg/m^3)	TLV CEILING (mg/m^3)
CADMIUM OXIDE FUME (As Cd)	1	0.0009-0.0009	------	-----	------	0.05	------	0.05
IRON OXIDE DUST AND FUME (As Fe2O3)	1	0.4095-0.4095	10	-----	-----	------	------	------
IRON OXIDE DUST AND FUME (As Fe)	1	0.2925-0.2925	10	-----	-----	5	------	------
ZINC OXIDE FUME (As ZnO)	1	0.9900-0.9900	5	10	-----	5	10	------
VANADIUM RESPIRABLE DUST/FUME (AS V2O5)	1	0.0010-0.0010	0.05	-----	-----	0.05	------	------
LEAD	3	0.0020- 3.6	0.05	-----	-----	0.15	------	------
MANGANESE FUME (As Mn)	1	0.0048-0.0048	1	3	-----	1	3	------
NICKEL METAL AND INSOLUBLE COMPOUNDS	1	0.0017-0.0017	1	-----	-----	1	------	------
CHROMIUM METAL (As Cr)	1	0.0031-0.0031	1	-----	-----	0.5	------	------
COBALT	1	0.0005-0.0005	0.05	-----	-----	0.05	------	------
COPPER FUME (As Cu)	1	0.0027-0.0027	0.1	-----	-----	0.2	------	------
WELDING FUMES (NOC), TOTAL PARTICULATE	2	0.0961-0.2901	5	-----	-----	5	------	------

TABLE 2 is continued on the following page

TABLE 2
RESULTS OF AIR SAMPLING FOR
SHIELDED METAL ARC WELDING (IND-011-08)
NAVY PUBLIC WORKS CENTER NORFOLK
SHOP WC 539
BUILDING X-336

HISTORICAL TIME WEIGHTED AVERAGE SAMPLE SUMMARY
SAMPLES COLLECTED 27 MARCH 85 TO 2 APRIL 90

STRESSOR NAME	NUMBER OF SAMPLES	TWA RANGE (mg/m³)	PEL 8-HR TWA (mg/m³)	PEL STEL (mg/m³)	PEL CEILING (mg/m³)	TLV 8-HR TWA (mg/m³)	TLV STEL (mg/m³)	TLV CEILING (mg/m³)
CADMIUM OXIDE FUME (As Cd)	2	0.0009-0.0010	------	-----	------	0.05	------	0.05
IRON OXIDE DUST AND FUME (As Fe2O3)	6	0.1334- 1.5	10	-----	-----	------	------	------
IRON OXIDE DUST AND FUME (As Fe)	14	0.0040- 1.1	10	-----	-----	5	------	------
MAGNESIUM OXIDE FUME,RESPIRABLE (As MgO)	2	0.0068-0.0240	5	-----	-----	------	------	------
MAGNESIUM OXIDE FUME,TOTAL DUST (As MgO)	2	0.0036-0.0108	10	-----	-----	10	------	------
ZINC OXIDE FUME (As ZnO)	8	0.0022-0.9900	5	10	-----	5	10	------
VANADIUM RESPIRABLE DUST/FUME (AS V2O5)	1	0.0010-0.0010	0.05	-----	-----	0.05	------	------
LEAD	25	0.0008- 3.6	0.05	-----	-----	0.15	------	------
MANGANESE FUME (As Mn)	3	0.0048-0.1417	1	3	-----	1	3	------
NICKEL METAL AND INSOLUBLE COMPOUNDS	12	0.0007-0.0073	1	-----	-----	1	------	------
CHROMIUM METAL (As Cr)	19	0.0006-0.0217	1	-----	-----	0.5	------	------
CHROMIUM (VI) SOLUBLE COMPOUNDS (As Cr)	1	0.0003-0.0003	-----	-----	-----	0.05	------	------
COBALT	1	0.0005-0.0005	0.05	-----	-----	0.05	------	------
COPPER FUME (As Cu)	8	0.0003-0.0083	0.1	-----	-----	0.2	------	------
COPPER DUST AND MISTS (As Cu)	1	0.0052-0.0052	1	-----	-----	1	------	------
NUISANCE PARTICULATES, TOTAL DUST	1	2.6- 2.6	15	-----	-----	10	------	------
WELDING FUMES (NOC), TOTAL PARTICULATE	15	0.0961- 4.1	5	-----	-----	5	------	------

(M)ultiple Command or Shop

NOTE: For Command, Shop, and Opcode entry: Entry must be made in computer logic order (Numeric alphabetical)! Example: Command VF-102 would need to be entered into the first Command field because in computer language it comes before VF-40. The "VF-" is the same for both; the computer looks at the next letter/ number "1" or "4"; and "1" comes before "4," therefore, VF-102 is before VF-40 in computer order.

EXAMPLE 1

BREATHING ZONE AIR SAMPLE TABLE

First Command:**AFSC**_____ Second Command:**CAMP ELMORE**____
First Shop:**FIRING RANGE**_ Second Shop:_____
First Opcode:**MIL-001-02** Second Opcode:___-___-__

Shop Location:_____ Include only this location ? N
Worksite:_____
CAS Number:**7439-92-1**____
Task:_____
Include samples after what date? **01/01/89**

Table Number:**1**_____
Table Title:**SMALL WEAPONS QUALIFYING**

Current Summary ? **Y**
Historical Summary ? **Y** Starting Date for Summary: 01/01/80
Summaries only ? N

(field definitions appear here)

In this example, the Table desired should contain samples of **Firing Ranges** from **Armed Forces Staff College (AFSC)** through **Camp Elmore**. The Opcode of interest is "**MIL-001-02**," which is weapons firing. The second Opcode is left blank.

Location and **Worksite** vary so these fields are left blank. The stressor of interest is lead, so the **CAS_NO** field is filled in with "**7439-92-1**", the CAS number for lead.

Table number and **Table Title** will appear in the Table Heading and have no bearing on the samples shown.

In this instance we want all samples collected after January 1, 1989 to be printed. The "**Include samples after what date ?**" is changed to "**01/01/89**" We also want **Current** and **Historical**

Summaries so each of these fields are changed to a "**Y**".

These entries will produce this Table:

TABLE 1
RESULTS OF AIR SAMPLING FOR
SMALL WEAPONS QUALIFYING (MIL-001-02)

EMPLOYEE NAME / ID	TASK OPERATION CODE	STRESSOR NAME COMMAND/SHOP	SAMPLE# DATE	SAMPLE TIME	RESULT (mg/m^3)	8-HR TWA (mg/m^3)
J. COOK 8000	WEAPONS FIRING MIL-001-02	LEAD AFSC /FIRING RANGE	SP89-0727 08/08/89	33 33**	0.0780	0.0054
A. COOPER 7000	WEAPONS FIRING MIL-001-02	LEAD AFSC /FIRING RANGE	SP89-0728 08/08/89	18 18**	0.0830	0.0031
D. HAMILTON 2000	WEAPONS FIRING MIL-001-02	LEAD AFSC /FIRING RANGE	SP89-0725 08/08/89	25 25**	0.1900	0.0099
R. NELL 3000	WEAPONS FIRING MIL-001-02	LEAD CAMP ELMORE /FIRING RANGE	SP89-0729 08/08/89	26 26**	< 0.0390	0.0021
D. SPONSLER 4000	WEAPONS FIRING MIL-001-02	LEAD CAMP ELMORE /FIRING RANGE	SP89-0726 08/08/89	26 26**	0.1400	0.0076

"*" The reported value exceeded an OSHA or ACGIH standard
"**" The exposure time used to calculate 8-HR TWA

CURRENT SURVEY TIME WEIGHTED AVERAGE SUMMARY
SAMPLES COLLECTED ON 8 AUGUST 89

STRESSOR NAME	NUMBER OF SAMPLES	TWA RANGE (mg/m^3)	PEL 8-HR TWA (mg/m^3)	PEL STEL (mg/m^3)	PEL CEILING (mg/m^3)	TLV 8-HR TWA (mg/m^3)	TLV STEL (mg/m^3)	TLV CEILING (mg/m^3)
LEAD	5	0.0021-0.0099	0.05	-----	-----	0.15	------	----

HISTORICAL TIME WEIGHTED AVERAGE SAMPLE SUMMARY
SAMPLES COLLECTED 29 JULY 82 TO 8 AUGUST 89

STRESSOR NAME	NUMBER OF SAMPLES	TWA RANGE (mg/m^3)	PEL 8-HR TWA (mg/m^3)	PEL STEL (mg/m^3)	PEL CEILING (mg/m^3)	TLV 8-HR TWA (mg/m^3)	TLV STEL (mg/m^3)	TLV CEILING (mg/m^3)
LEAD	34	0.0011-0.0594	0.05	-----	-----	0.15	------	----

Create WordPerfect File

Selection of this option will create an ASCII file that may be converted to a word processing file. It is certain that WordPerfect will accept the file and successfully convert it. Other word processing packages probably will also work.

Upon selection, the following message will appear:

Enter Path and File Name: A:

Enter Path and File Name; e.g. SIMA.TAB

Enter Path and File Name: A:SIMA.TAB

After pressing "ENTER" the following message is displayed:

Creating WordPerfect File

When the file is complete, you will be returned to the Air Sample Table for Report Submenu.

Browse Results for Table

Selection of this option allows the user to browse the records that have been selected on the basis of the user defined search criteria. The dBase IV Browse mode is used for this operation. Once the Browse screen is available, all dBase functions permitted in the Browse mode are available. These functions are menu driven and are accessible by pressing **F10**. The primary functions allowed are editing and deleting, however, any function on the menu is permitted. Any actions taken to modify data will not affect the main database from which these records were obtained.

Upon pressing **Browse Results for Table**, the following menu appears:

View Current Samples

View Historical Samples

==>Exit View Menu

The two choices available relate to the "**Include samples after what date field ?"** and the "**Starting Date for Historical Summary:**" fields. "**View Current Samples"** presents all samples meeting the search criteria for **after** the "**Include samples after what date ?**" field entry. "**View Historical Samples**" presents all samples meeting the search criteria and starting **after** the entry in the "**Starting Date for Historical Summary:** " field.

AIR SAMPLE RESULT ANALYSIS/LIST

This option is used to list and analyze breathing zone air sample data based on a defined population of interest. A population may be defined on the basis of Command, Shop, Opcode, Task, Stressor, Location, Occupational Title and Date of Sampling. After the population is defined, records meeting the specified criteria are found. The sampling results can be listed or viewed individually, or summarized in a variety of ways. The summary options are available only in printed format.

From the "**IHIMS MAIN MENU**" with the shadow bar on "**BREATHING ZONE**," press "**ENTER**." The following menu will then be displayed:

BREATHING ZONE MENU

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE MISC QUIT
BREATHING ZONE SAMPLES

Enter Background/results
Enter Results Only
Edit Results
Enter/Edit Time Weighted Averages
Air Sample Table for Report
Air Sample Result Analysis/List
Print Air Sample SF 600s
==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

With the shadow bar on "Air Sample Result Analysis/List" (as shown above), press "ENTER." The following will be displayed on the screen.

AIR SAMPLE SUMMARY TABLE POPULATION DEFINITION

Command: _ _____
Shop: _ _____
Opcode: ___-___-__
Task: * _____ *
Location: _____
Occupation: _____
CAS Number: _____
Stressor: _____
Starting Date:01/01/80
Ending date:04/17/90

Everything OK ? Y

Expanded field definitions are listed below:

All fields are "optional." The information entered into the "**AIR SAMPLE SUMMARY TABLE POPULATION DEFINITIONS**" screen is used to sort through the database. This enables you to lump or split your data into specific populations for analysis. One or all of the fields (as many as you want) can be used to generate the specific table you desire.

Enter Command - Enter name of command. A table will be generated that lists all results for this command. Enter "S" in the first field to include similar commands i.e. SIMA, VF, VAW

Enter Shop - Enter the Shop name. A table will be generated that lists all results for this shop. Enter "S" in the first field to include shops in a division, i.e. 67 for 67A, 67B

Enter Opcode - Enter "OPCODE" from Appendix A. A table will be generated that lists all results for this opcode. The first three alpha characters and the second three numerical digits are required to generate a table based on Opcode. The last two digits can be used to make the table more specific.

Enter Task - Enter all or part of a task description. The option to do a "wild card" search exists by using asterisks to begin and end the task description. If the "wild card" search is used, all sample results with tasks containing the text of the task description entered will appear in the table. If the "wild card" option is not used, the table will include only those sample results which have a task that exactly matches the task description entered.

Enter Location - Enter the Location. A table will be generated that lists all results for this location.

Enter Occupation - Enter the Occupation. A table will be generated that lists all results for this occupation.

Enter CAS Number - Enter CAS Number from Appendix B. A table will be generated that lists all results for this CAS number.

Enter Stressor - Enter all or part of a stressor name. e.g. entering chlorodiphenyl will result in a table comprised of chlorodiphenyl (54% chlorine) and chlorodiphenyl (42% chlorine).

Starting Date - Only samples taken after the date entered will be included.

Ending date - Samples before this date will be included.

Fill in fields to generate the population desired. All fields are optional, however at least one field must be filled in. Other fields can be used to further specify the data to be listed or analyzed.

If Opcode was specified, you may see the following message.

There are 5 mixed operation TWAs
(I)nclude, (E)xclude or (L)eave as is ?

This message means that some of the TWAs were the result of two or more different operations, i.e. sanding and painting and the Opcode in the TWA file does not match the one specified. **(I)**nlude option treats all TWAs as the one you specified. **(E)**xclude option eliminates mixed TWAs from the statistical analysis. **(L)**eave as is makes no changes. The actual database is unaffected by any action taken to generate the table.

After entering the desired information in the fields, the program will display **"Finding the Records you Want, Be Patient."** After the record search is completed, the following Screen will be displayed. Use the up arrow or down arrow to choose an Option and Press Enter. An explanation of the options follows:

Print Results

Print Summary By CAS Number

Print Summary by OPCODE and CAS Number

Print Summary by COMMAND, OPCODE and CAS Number

Print Summary by COMMAND,SHOP,OPCODE,CAS Number

View Results and TWA's

Trend Line Chart

Define Population for Table

==>Exit To BREATHING ZONE

Use the up and down arrow keys to select option

This menu gives seven options to present or view your data and the final option "Define Population for Table" allows for defining another population for analysis, by presenting a new "Air Sample Summary Table Population Definition Screen." After selecting any of the Print or View Options, information pertaining to the number of samples comprising your population will be displayed. As an example:

There are 23 results and 8 TWAs

Press any key to continue...

Print Results

After the number of samples message, the following choice will be presented:

Begin (P)rinting or (R)eturn to Menu

Pressing "P" will cause the table to be printed; pressing "R" will return you to the menu. This option only appears for the **Print Results** option.

Air Sample Summary For
NSC IND-011-08
PREPARED 6 MARCH 92

SAMPLE#	DATE	SHOP	TASK	LOCATION	OCCUPATION	CAS NUMBER	TIME	RESULT
SP87-0283	05/19/87	704.2 WELDING	WELDING OPERATION	CI-167	WELDER	1309-37-1A	275	0.2500
		ESTIMATED TWA FOR IRON OXIDE DUST AND FUME (As Fe2O3) IS 0.1432 BASED ON A TIME OF 275 MINUTES						
SP87-0283	05/19/87	704.2 WELDING	WELDING OPERATION	CI-167	WELDER	7439-92-1	275	<0.0033
		ESTIMATED TWA FOR LEAD IS 0.0019 BASED ON A TIME OF 275 MINUTES						
SP87-0291	05/21/87	704.2 WELDING	WELDING	CI-167	WELDER	7439-92-1	343	0.0160
		ESTIMATED TWA FOR LEAD IS 0.0160 BASED ON A TIME OF 343 MINUTES						
SP87-0291	05/21/87	704.2 WELDING	WELDING	CI-167	WELDER	7439-96-5B	343	0.0460
		ESTIMATED TWA FOR MANGANESE FUME (As Mn) IS 0.0460 BASED ON A TIME OF 343 MINUTES						

```
==========================================================================================================================
SP87-0291   05/21/87  704.2 WELDING         WELDING                CI-167      WELDER                 7440-47-3A    343    0.0009
                                ESTIMATED TWA FOR  CHROMIUM METAL (As Cr) IS  0.0009 BASED ON A TIME OF 343 MINUTES
==========================================================================================================================
SP87-0290   05/21/87  704.2 WELDING         WELDING                CI-167      WELDER                 7429-90-5C    345    0.0210
                                ESTIMATED TWA FOR  ALUMINUM WELDING FUMES (As Al) IS  0.0210 BASED ON A TIME OF 345 MINUTES
==========================================================================================================================

                                                    Page 1
```

Each Listing or Summary has a header at the top of the table. The second line of the header identifies what the defining or sorting parameters were. The parameters used for the **Print Results** example was Command= "NSC" and Opcode="IND-011-08" SMAW. Under the conditions of this search, all samples corresponding to NSC and IND-011-08 would appear is this listing. The third line indicates when the table was generated. In the **Summary Tables** only, the fourth line indicates the manner the data are presented e.g., **By CAS Number**, **By Opcode, CAS Number,** the fifth line shows when the samples were collected. In some cases the list could be very long, thus the rationale for the option to return to the menu and perhaps run a summary, or redefine and refine the search. Unique to the **results** listing are the column headings. If additional fields were entered in the screen, they would be listed on this line and would not be listed on the actual table header. The first line or header identifies the information listed below it. In this example, Sample Number, Date of Sample, Shop, Opcode, Task, Location, CAS Number, Time of Sample, and result are listed. The last line provides the TWA and the length of time the estimated TWA was based. When printing is completed, Print and View Menu reappears.

Print Summary by CAS Number

Choosing this option groups all data by CAS number regardless of OPCODE, COMMAND or any other pertinent determinant variable. In the example given below, all stressors are grouped from the operation SMAW welding at NSC.

```
                                    Air Sample Summary For
                                     NSC      IND-011-08
                                    PREPARED   6 MARCH 92

                                        By  Cas Number
                              Inclusive dates: 04/09/82  to  03/01/90
-----------------------------------------------------------------------------------------------
|                                    |    8-HR      |   N   |     TWA      | GEOMETRIC | GSD  |
|                                    |  STANDARD    |       |    SAMPLE    |   MEAN    |      |
|           STRESSOR                 |(O)SHA/(A)CGIH|       |    RANGE     |           |      |
-----------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------
|IRON OXIDE DUST AND FUME (As Fe2O3)  |      10.0 - O|   6   |0.0038-   7.8 |     0.1524|13.115|
-----------------------------------------------------------------------------------------------
|ZINC OXIDE FUME  (As ZnO)            |       5.0 - O|   6   |0.0005-0.4600 |     0.0063|27.172|
-----------------------------------------------------------------------------------------------
|ALUMINUM WELDING FUMES (As Al)       |       5.0 - O|   4   |0.0096-0.0210 |     0.0134| 1.407|
-----------------------------------------------------------------------------------------------
|LEAD                                 |    0.0500 - O|  12   |0.0010-0.0160 |     0.0026| 1.947|
```

MANGANESE FUME (As Mn)	1.0 - O	7	0.0009-0.0460	0.0081	4.464
NICKEL METAL AND INSOLUBLE COMPOUNDS	1.0 - O	3	0.0010-0.0080	0.0026	2.848
CHROMIUM METAL (As Cr)	1.0 - O	11	0.0006-0.3000	0.0014	6.195
WELDING FUMES (NOC), TOTAL PARTICULATE	5.0 - O	4	2.7- 23.5	6.4	2.804

Print Summary By OPCODE and CAS Number

This option groups data together on the basis of Operation code and Stressor. In the example that follows, in the first example the only input parameter was the CAS number for PCB's 42% Chlorine. In the second example the input was MIL-001-02, Weapons Firing and 7439-92-1 Lead, Inorganic.

Air Sample Summary For
53469-21-9
PREPARED 7 MARCH 92

By Opcode, Cas Number

	8-HR	N	TWA	GEOMETRIC	GSD

```
|        OPERATION/OPCODE/               |  STANDARD    |       |    SAMPLE    |   MEAN    |      |
|            STRESSOR                    |(O)SHA/(A)CGIH|       |    RANGE     |           |      |
-----------------------------------------------------------------------------------------------------

==> HM/HW HANDLING/CLEANUP, MULTIPLE OPERATIONS/IND-025-00
==>   Inclusive dates: 06/07/89  to  10/13/89
-----------------------------------------------------------------------------------------------------
|CHLORODIPHENYL (42% CHLORINE)           |       1.0 - O|   8   |0.0054-0.0187 |     0.0093| 1.622|
-----------------------------------------------------------------------------------------------------
```

```
                                    Air Sample Summary For
                                 MIL-001-02           7439-92-1
                                    PREPARED   7 MARCH 92

                                    By Opcode, Cas Number

-----------------------------------------------------------------------------------------------------
|                                        |    8-HR      |   N   |     TWA      | GEOMETRIC | GSD  |
|        OPERATION/OPCODE/               |  STANDARD    |       |    SAMPLE    |   MEAN    |      |
|            STRESSOR                    |(O)SHA/(A)CGIH|       |    RANGE     |           |      |
-----------------------------------------------------------------------------------------------------

==> WEAPONS FIRING/MIL-001-02
==>   Inclusive dates: 07/29/82  to  08/08/89
-----------------------------------------------------------------------------------------------------
|LEAD                                    |    0.0500 - O|  37   |0.0011-0.0594 |     0.0059| 3.209|
-----------------------------------------------------------------------------------------------------
```

Print Summary by COMMAND, OPCODE and CAS Number

```
                                    Air Sample Summary For
                                           IND-011-08
                                    PREPARED   6 MARCH 92

                                 By Command, Opcode, Cas Number

-----------------------------------------------------------------------------------------------------
|            COMMAND                     |    8-HR      |   N   |     TWA      | GEOMETRIC | GSD  |
|        OPERATION/OPCODE/               |  STANDARD    |       |    SAMPLE    |   MEAN    |      |
|            STRESSOR                    |(O)SHA/(A)CGIH|       |    RANGE     |           |      |
-----------------------------------------------------------------------------------------------------

NAVRESSO
SHIELDED METAL ARC WELDING/IND-011-08    Inclusive Dates: 02/09/90  to  02/14/90
-----------------------------------------------------------------------------------------------------
|IRON OXIDE DUST AND FUME (As Fe)        |      10.0 - O|   2   |0.0214-0.0392 |   ******  | **** |
|LEAD                                    |    0.0500 - O|   2   |0.0016-0.0017 |   ******  | **** |
|COPPER FUME (As Cu)                     |    0.1000 - O|   2   |0.0002-0.0004 |   ******  | **** |
|WELDING FUMES (NOC), TOTAL PARTICULATE  |       5.0 - O|   2   |0.3883-   1.4 |   ******  | **** |
-----------------------------------------------------------------------------------------------------

NSC
SHIELDED METAL ARC WELDING/IND-011-08    Inclusive Dates: 04/09/82  to  03/01/90
```

IRON OXIDE DUST AND FUME (As Fe2O3)	10.0 - O	6	0.0038- 7.8	0.1524	13.115
ZINC OXIDE FUME (As ZnO)	5.0 - O	6	0.0005-0.4600	0.0063	27.172
ALUMINUM WELDING FUMES (As Al)	5.0 - O	4	0.0096-0.0210	0.0134	1.407
LEAD	0.0500 - O	12	0.0010-0.0160	0.0026	1.947
MANGANESE FUME (As Mn)	1.0 - O	7	0.0009-0.0460	0.0081	4.464
NICKEL METAL AND INSOLUBLE COMPOUNDS	1.0 - O	3	0.0010-0.0080	0.0026	2.848
CHROMIUM METAL (As Cr)	1.0 - O	11	0.0006-0.3000	0.0014	6.195

PWC
SHIELDED METAL ARC WELDING/IND-011-08 Inclusive Dates: 11/22/82 to 07/06/90

CADMIUM OXIDE FUME (As Cd)	0.0500 - A	10	0.0004-0.0020	0.0011	1.560
IRON OXIDE DUST AND FUME (As Fe)	10.0 - O	41	0.0010- 1.1	0.0880	4.294
ZINC OXIDE FUME (As ZnO)	5.0 - O	28	0.0005-0.9900	0.0063	4.519
VANADIUM RESPIRABLE DUST/FUME (AS V2O5)	0.0500 - O	1	0.0010-0.0010	******	****
ALUMINUM WELDING FUMES (As Al)	5.0 - O	2	0.0008-0.0044	******	****
LEAD	0.0500 - O	69	0.0008- 3.6	0.0038	4.348
MANGANESE FUME (As Mn)	1.0 - O	17	0.0008-0.1417	0.0056	4.670
NICKEL METAL AND INSOLUBLE COMPOUNDS	1.0 - O	27	0.0007-0.0073	0.0015	1.658
TIN OXIDE (As Sn)	2.0 - O	1	0.0200-0.0200	******	****
CHROMIUM METAL (As Cr)	1.0 - O	48	0.0006-0.0656	0.0024	2.923
COBALT	0.0500 - O	1	0.0005-0.0005	******	****
COPPER FUME (As Cu)	0.1000 - O	11	0.0003-0.0083	0.0012	2.849
WELDING FUMES (NOC), TOTAL PARTICULATE	5.0 - O	42	0.0961- 4.1	1.1	2.385

Print Summary by COMMAND, SHOP, OPCODE, and CAS Number

This option separates data by all four criteria. This Example input was the OPCODE for SMAW.

Air Sample Summary For
IND-011-08
PREPARED 6 MARCH 92

By Command, Shop, Opcode, CAS Number

COMMAND/SHOP OPERATION/OPCODE/ STRESSOR	8-HR STANDARD (O)SHA/(A)CGIH	N	TWA SAMPLE RANGE	GEOMETRIC MEAN	GSD
NSC / 54.3					
SHIELDED METAL ARC WELDING/IND-011-08 Inclusive Dates: 04/09/82 to 08/31/88					
LEAD	0.0500 - O	3	0.0020-0.0021	0.0021	1.029
MANGANESE FUME (As Mn)	1.0 - O	1	0.0067-0.0067	******	****
NICKEL METAL AND INSOLUBLE COMPOUNDS	1.0 - O	1	0.0023-0.0023	******	****
CHROMIUM METAL (As Cr)	1.0 - O	3	0.0006-0.0021	0.0010	1.895
WELDING FUMES (NOC), TOTAL PARTICULATE	5.0 - O	3	2.7- 9.1	4.2	1.984
NSC / 703.211 WELDING					
SHIELDED METAL ARC WELDING/IND-011-08 Inclusive Dates: 08/19/85 to 05/21/87					
IRON OXIDE DUST AND FUME (As Fe2O3)	10.0 - O	3	0.1432-0.4600	0.2430	1.806
ZINC OXIDE FUME (As ZnO)	5.0 - O	2	0.0005-0.4600	******	****
ALUMINUM WELDING FUMES (As Al)	5.0 - O	1	0.0112-0.0112	******	****
LEAD	0.0500 - O	5	0.0010-0.0160	0.0030	2.796
MANGANESE FUME (As Mn)	1.0 - O	4	0.0021-0.0460	0.0166	4.225
NICKEL METAL AND INSOLUBLE COMPOUNDS	1.0 - O	2	0.0010-0.0080	******	****
CHROMIUM METAL (As Cr)	1.0 - O	5	0.0006-0.3000	0.0025	14.685
PWC / WC 539					
SHIELDED METAL ARC WELDING/IND-011-08 Inclusive Dates: 03/27/85 to 04/02/90					
CADMIUM OXIDE FUME (As Cd)	0.0500 - A	2	0.0009-0.0010	******	****
IRON OXIDE DUST AND FUME (As Fe2O3)	10.0 - O	6	0.1334- 1.5	0.3909	2.886
IRON OXIDE DUST AND FUME (As Fe)	10.0 - O	14	0.0040- 1.1	0.1122	5.732
MAGNESIUM OXIDE FUME,RESPIRABLE (As MgO)	5.0 - O	2	0.0068-0.0240	******	****
ZINC OXIDE FUME (As ZnO)	5.0 - O	8	0.0022-0.9900	0.0086	7.757
VANADIUM RESPIRABLE DUST/FUME (AS V2O5)	0.0500 - O	1	0.0010-0.0010	******	****
LEAD	0.0500 - O	25	0.0008- 3.6	0.0030	5.128
MANGANESE FUME (As Mn)	1.0 - O	3	0.0048-0.1417	0.0204	5.732
NICKEL METAL AND INSOLUBLE COMPOUNDS	1.0 - O	12	0.0007-0.0073	0.0016	1.878
CHROMIUM METAL (As Cr)	1.0 - O	19	0.0006-0.0217	0.0019	2.504
CHROMIUM (VI) SOLUBLE COMPOUNDS (As Cr)	0.0500 - A	1	0.0003-0.0003	******	****
COBALT	0.0500 - O	1	0.0005-0.0005	******	****
COPPER FUME (As Cu)	0.1000 - O	8	0.0003-0.0083	0.0016	2.979
WELDING FUMES (NOC), TOTAL PARTICULATE	5.0 - O	15	0.0961- 4.1	0.8397	3.168

For each of the Summary options, the following information is provided:

The INCLUSIVE DATE of sampling listed in the table; N (number of samples) for this stressor; SAMPLE RANGE of samples included in the table; the GM (geometric mean); the GSD (geometric standard deviation).

A Summary will be generated for each stressor. If less than three samples have been taken, only INCLUSIVE DATES, N, AND SAMPLE RANGE will be listed in the summary. Three or more samples are required for statistical analysis.

TREND LINE CHART

After this option is chosen, the following will appear on the screen:

CAS NUMBER _____

Enter a CAS Number; for this example 7439-92-1 (for Lead) will be entered.

CAS NUMBER 7439-92-1_____

Press "ENTER" after entering CAS Number and a CHART will be generated as below:

```
Air Sample Summary For
NAVCOMMAND              7439-92-1
PREPARED 17 APRIL 90

TREND PLOT

                            LEAD CONCENTRATION=>
DATE     ------------------------------------------------------------------------------------------------ 02/12/90 |
0.0020
         |
02/15/90 |**   0.0090
         |
02/21/90 |**********   0.0500
         |
03/05/90 |   0.0021
         |
03/16/90 |   0.0011
         |
03/28/90 |********************************************************************************************** 0.5208
         |
04/11/90 |   0.0006
```

BREATHING ZONE SF 600s

-Step 1-

Select BREATHING ZONE from the IHIMS MENU. The BREATHING ZONE MENU will be displayed as below.

BREATHING ZONE MENU

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE MISC QUIT
BREATHING ZONE SAMPLES

Enter Background/results
Enter Results Only
Edit Results
Enter/Edit Time Weighted Averages
Air Sample Table for Report
Air Sample Result Analysis/List
Print Air Sample SF 600s
==> Exit to Main Menu

Use the up and down cursor keys to choose an option from menu

-Step 2-

With the shadow bar on "Print Air Sample SF 600s," as displayed above, press "ENTER." The following screen will then be displayed:

Do SF600s ? (Y/N) N

-Step 3-

Change the default to "Y" and press "ENTER" to start SF 600s. If you have changed your mind, change the default "Y" to "N" to get back to the BREATHING ZONE MENU.

-Step 4-

The following screen will be displayed:

```
(E)ntire set or (I)ndividual ? E
```

Press "ENTER" with "E" selected. See Step 6.

Press "ENTER" with "I" selected. See Step 10.

-Step 6-

Pressing "ENTER" with the default "E" will generate an entire set of SF 600s. This means that for any data that has been entered since this program (Print SF 600) was last run, an SF 600 will be generated. The following will be displayed on the screen:

```
Working on the SF600s, It'll be a minute
```

After a few minutes (depends on the size of your database) the following message will be displayed on the screen:

```
"There are (some number) samples to print
   It will take about (some number) minutes to print
 Press any key to continue..."
```

-Step 7-

After pressing "ENTER" the following message will appear on the screen:

```
Be sure printer is on
```

Press any key to continue...

-Step 8-

Printer should start printing SF 600s. When done printing, the following message will appear on the screen:

-Step 9-

Everything OK ? (Y/N) Y

You are being asked if all of the SF 600s look all right. Are they on one sheet of paper? Did they print or did the ribbon jump off track? Did the printer ribbon skip? In other words, do the SF 600s look good enough to put into the individuals' medical records.

The program gives you a second chance if there was a mechanical problem and the SF 600s need to be redone. If the SF 600s need to be redone, change the default "Y" to "N" and press "ENTER". The process can be repeated after repairing your mechanical problems.

Once "ENTER" has been pressed with the default "Y" selected, the records are marked to insure that once an SF 600 has been printed for an individual sampled on a specific date, a second SF 600 will not be generated for the same sample. The following message will also appear: "Will now print a list of sample numbers, by command"; "Press any key ...." A list will be printed with the sample numbers for the SF 600s just generated.

-Step 10-

A second or duplicate SF 600 can be generated by selecting "I" on the entry screen displayed below (Step 5):

(E)ntire set or (I)ndividual ? I

INDIVIDUAL OR DUPLICATE SF 600 GENERATION

If the "E" is changed to "I" and "ENTER" is pressed, an individual SF 600 can be generated using the individual's last name, social security number (only the last four digits of

his/her number are required), and the date the sample was taken. The INDIVIDUAL 600 screen will be displayed on the screen as follows:

```
Individual SF600 Data Entry Screen
        Last Name:_________________
        SSN/Badge:____
             Date:01/01/80
```

-Step 11-

Fill in Individual SF600 screens as shown below:

```
Individual SF600 Data Entry Screen
        Last Name:D0E_____________
        SSN/Badge:0000
             Date:02/14/90
```

The SF 600s will be generated at this time:

```
Working on the SF600s, It'll be a minute
```

From this point on it works exactly the same as described in step 6 through 9.

An example of a computer generated SF600 is presented on the following page.

HEALTH RECORD | CHRONOLOGICAL RECORD OF MEDICAL CARE

DATE | Symptoms,Diagnosis,Treatment,Treating Organization (SIGN EACH ENTRY)

INDUSTRIAL HYGIENE DATA

SAMPLING DATE | **COMMAND: SIMA NORFOLK** **SHOP: 56A** **WORKSITE: USS GRIMLEY, GALLEY**

5 June 86 | **OCCUPATION/JOB TITLE: HT2** **SHOP LOCATION: CEP-200**

OPERATION: METAL CLEANING MECHANICAL, GRINDING **OPCODE: IND-001-08**

NAVHOSP PORTSMOUTH	**SAMPLE NUMBER**	**TASK**	**STRESSOR**	**TIME**	**RESULT**	**STEL/ CEILING**
	SN86-0281	GRINDING ON SHIP	IRON OXIDE DUST AND FUME (As Fe2O3)	205	< 0.0030 mg/m3	NONE
	==>TWA FOR IRON OXIDE DUST AND FUME (As Fe2O3) 0.0013 mg/m3 PEL: 10 mg/m3 TLV: ------ mg/m3					
	SN86-0281	GRINDING ON SHIP	IRON OXIDE DUST AND FUME (As Fe)	205	< 0.0020 mg/m3	NONE
	==>TWA FOR IRON OXIDE DUST AND FUME (As Fe) 0.0009 mg/m3 PEL: 10 mg/m3 TLV: 5 mg/m3					
	SN86-0281	GRINDING ON SHIP	LEAD	205	0.0950 mg/m3	NONE
	==>TWA FOR LEAD 0.0406 mg/m3 PEL: 0.05 mg/m3 TLV: 0.15 mg/m3					
	SN86-0281	GRINDING ON SHIP	NUISANCE PARTICULATES, TOTAL DUST	205	0.5000 mg/m3	NONE
	==>TWA FOR NUISANCE PARTICULATES, TOTAL DUST 0.2135 mg/m3 PEL: 15 mg/m3 TLV: 10 mg/m3					

RESPIRATORY PROTECTION: Supplied Air Half Face Continuous Flow wo/ESCAPE

COMMENTS:

INDUSTRIAL HYGIENIST:

RECORDS MAINTAINED AT:> **BRANCH MEDICAL CLINIC NAVAL STATION NORFOLK**

PATIENT'S NAME: **WILLIAMS S.** SEX

RELATIONSHIP TO SPONSOR STATUS RANK/GRADE

SPONSOR'S NAME ORGANIZATION : **SIMA NORFOLK**

DEPART./SERVICE SSN/IDENTIFICATION NO. **000-00-0000** DATE OF BIRTH

CHRONOLOGICAL RECORD OF MEDICAL CARE STANDARD FORM 600

SECTION 2

NOISE DOSIMETRY

-Step 1-

Select DOSIMETRY from the IHIMS MENU. The NOISE DOSIMETRY MENU will be displayed as below:

NOISE DOSIMETRY MENU

BREATHING ZONE **DOSIMETRY** GENERAL AREA BULK/WIPE MISC QUIT
NOISE DOSIMETRY

Add New Data
Edit Data
Standard Noise Dosimetry Table
Noise Dosimetry Summary
Print Noise Dosimetry SF 600s
==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

A brief description of the seven options are listed below.

Add New Data - Enter dosimetry background and sampling data.
Pg. 2-3

Edit Data - Used to edit background and data. Sample numbers are used to access data records.
Pg. 2-8

- Used to delete a record.
Pg. 2-10

Standard Noise Dosimetry Table - Generates a sample table sorted by Command and Shop (work center) for entry into survey report.
Pg. 2-11

Noise Dosimetry Summary	-	Generates a table with statistical analysis of TWAs. Pg. 2-26
Print Noise Dosimetry SF 600s	-	Print SF 600s for medical records for individuals sampled. Pg. 2-31
==> Exit to Main Menu	-	Exit to IHIMS MENU.

NOISE DOSIMETRY
ADD NEW DATA

-Step 1-

Select DOSIMETRY from the IHIMS MENU. The NOISE DOSIMETRY MENU will be displayed as below:

```
                    NOISE DOSIMETRY MENU
____________________________________________________________________
BREATHING ZONE   DOSIMETRY   GENERAL AREA   BULK/WIPE   MISC   QUIT
                 NOISE DOSIMETRY

                 Add New Data
                 Edit Data
                 Standard Noise Dosimetry Table
                 Noise Dosimetry Summary
                 Print Noise Dosimetry SF 600s
                 ==> Exit to Main Menu
                 ____________________________________________

      Use the up and down cursor keys to choose an option from this menu
____________________________________________________________________
```

-Step 2-

With the shadow bar on "Add New Data" as shown above press "ENTER." The following NOISE DOSIMETRY DATA ENTRY screen will be displayed.

```
                Noise Dosimetry Data Entry Screen
                                                Date:03/15/90
   Activity:____________________                  Shop:_______________
   Location:____________________          Sampled By:___
____________________________________________________________________
           Sample Number:____-____
               Last Name:_________________ First Initial:_
        SSN/Badge Number:___-__-____
               Job Title:_________________ (M)il or (C)iv:C
                Worksite:_________________
                  Opcode:___-___-__

                    Task:_________________
          Noise Source A:_________________
          Noise Source B:_________________
          Noise Source C:_________________
      Hearing Protection:__      TAD ? N
             Sample Time:____
            Lavg or LDOD:  0.00  TWA:  0.0  SAMPLE TYPE:__
____________________________________________________________________
```

(field definitions appear here)

-Step 3-

NOTE: All fields on this screen are mandatory, except for "Noise Source B and C" which are optional. If left blank and pressing "ENTER" or trying to use the cursor keys to move out of the field, a bell will sound and a message will be displayed at the bottom of the screen. Once a field has been filled out, the cursor keys can be used to go back and change field information.

Fill in the data fields. Notice after entering the "OPCODE," a description of the code will be displayed below the "OPCODE." Check description to insure it matches the "OPCODE" entered.

Field definitions are at the bottom of the screen. The following are expanded definitions.

Date: - Date of sample (MM/DD/YY). The default is the current computer date.

Activity - Name of command where sample was taken (Must always be the same for a specific command. Information is sorted by command to produce tables, therefore the name used

for a command must be exactly the same each time entered).

Shop - Shop name or code. (Like command, Shop must be entered exactly the same each time. It is also used to sort information.)

Location - Location of shop (work center).

Sampled By - Initials of individual taking sample.

Sample Number - Sample number is an eight character code divided into several parts. "TT90-0001" The "TT" is an alpha code to identify section/group collecting the sample. The "90" is for the year. The "0001" is the number of the sample ranging from 0001 to 9999 for each year.

If the sample number you enter is already in the database, a bell will sound and a message will appear saying "Duplicate sample number can not be entered".

Last Name - Last name of individual sampled.

First Name - First name of individual sampled.

SSN/Badge Number - The first 5 digits may be left blank but the last four digits of social security number are mandatory. (Medical records are filed by last four digits of SSN)

Job Title - Job title of individual sampled.

(M)il or (C)iv - Individual sampled is military or civilian.

Worksite - Location where individual worked during the day.

Opcode - See appendix A for list of opcodes.

Enter "OPCODE" from Appendix A which best describes the operation sampled. After entering an "OPCODE" a description of the opcode will appear. If description does not match the operation sampled, curser up to the "OPCODE" field, check Appendix A, and enter the new/correct opcode.

If a nonexistent "OPCODE" is entered, the following message will appear: "NO SUCH NUMBER, TRY AGAIN." Press the space bar to clear and reenter new/current opcode. If an illegal value is entered, a message will appear at the bottom of the screen.

Task - Individual work task being performed. Can be the same as the "OPCODE" but should be more specific.

Noise Source A - Primary noise source (Can be equipment used by individual sampled or an environmental source).

Noise Source B - Secondary noise source (Additional noise source that meets the definition of Noise Source A).

Noise Source C - Third noise source (Additional noise source that meets the definition of Noise Source A).

Hearing Protection- Type of hearing protection utilized by individual sampled.

M - Muffs
P - Plugs
S - Sound Band
C - Combination (plugs and muffs)
N - None

TAD - Default is "N" for No - or this person is not TAD to the Command from which the sample was collected. "Y" or Yes - the employee sampled is not assigned to the Command from which the sample was collected. Entering "Y" will allow you to enter the parent Command from which the TAD employee came. SF-600 forms will be generated based on the parent Command.

Sample Time - Length of sample in minutes.

Lavg or LDOD - Dosimetry reading.

TWA - Calculated by Dosimetry or hand (usually the same as LDOD).

Sample Type - ND for valid Noise dosimetry sample.

- NX for invalid sample.

An example of filled in screen:

```
Noise Dosimetry Data Entry Screen
                                        Date:03/15/90
   Activity:NAVCOMMAND__________          Shop:IND HYG_________
      Location:X-336_______________     Sampled By:JEB

           Sample Number:TT90-0003
               Last Name:DOE_______________ First Initial:J_
        SSN/Badge Number:___-__-0000
               Job Title:IH________________ (M)il or (C)iv:C
                Worksite:OFFICE___________
                  Opcode:PRO-000-00
                PROFESSIONAL, TECH AND MGMT
                    Task:WORKING ON COMPUTER__
          Noise Source A:AIR CONDITIONER______
          Noise Source B:PRINTER______________
          Noise Source C:PHONE________________
      Hearing Protection:N        TAD N
             Sample Time:375
            Lavg or LDOD: 70.0  TWA:  70.0  Sample Type:ND
```

After the TWA is entered, the EXIT screen will be displayed under the Noise Dosimetry Data Entry screen:

```
PRESS (ENTER) TO CONTINUE ADDING RECORDS
 C, TO CARRY DATA, OR X TO EXIT
```

-Step 4-

Press "ENTER" to get another blank "NOISE DOSIMETRY DATA ENTRY" screen. Fill out new form the same as outlined in step 3.

The "C" to carry function carries: ACTIVITY; SHOP; LOCATION; SAMPLED BY; and OPCODE data fields to the next record (this saves a few key strokes). Press "ENTER" to accept displayed data, or type in the new/changed information.

Pressing "X" will exit back to the DOSIMETRY MENU.

NOISE DOSIMETRY
NOISE EDIT

-Step 1-

Select DOSIMETRY from the IHIMS MENU. The NOISE DOSIMETRY MENU will be displayed as below:

NOISE DOSIMETRY MENU

BREATHING ZONE	**DOSIMETRY**	GENERAL AREA	BULK/WIPE	MISC	QUIT
	NOISE DOSIMETRY				

Add New Data
Edit Data
Standard Noise Dosimetry Table
Noise Dosimetry Summary
Print Noise Dosimetry SF 600s
==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "Edit Data" as shown above, press "ENTER." The following NOISE DOSIMETRY EDITING screen will be displayed.

NOISE DOSIMETRY EDITING
ENTER SAMPLE NUMBER TO EDIT OR PRESS ENTER TO QUIT

Enter Sample Number to Edit: -

-Step 3-

Enter sample number of record to be edited as shown below:

```
NOISE DOSIMETRY EDITING
ENTER SAMPLE NUMBER TO EDIT OR ENTER TO QUIT

Enter Sample Number to Edit: TT90-0003
```

If "ENTER" is pressed without entering a sample number, you will be returned to the DOSIMETRY MENU.

-Step 4-

The NOISE DOSIMETRY DATA EDITING screen is displayed below:

```
Noise Dosimetry Data Entry Screen
                                        Date:03/15/90
Activity:NAVCOMMAND_________              Shop:IND HYG_________
   Location:X-336_______________       Sampled By:JEB

         Sample Number:TT90-0003
             Last Name:DOE_____________ First Initial:J_
      SSN/Badge Number:___-__-0000
             Job Title:IH_______________ (M)il or (C)iv:C
              Worksite:OFFICE___________
                Opcode:PRO-000-00
              PROFESSIONAL, TECH AND MGMT
                  Task:WORKING ON COMPUTER__
        Noise Source A:AIR CONDITIONER______
        Noise Source B:PRINTER______________
        Noise Source C:PHONE________________
   Hearing Protection:N     TAD N
          Sample Time:375
         Lavg or LDOD: 70.0  TWA:  70.0  Sample Type:ND
   Delete this Record ? (Y/N) N
```

(field definitions appear here)

Type over data in the field to make corrections. If data in field is correct, press "ENTER" to accept data or use the up/down and right/left cursor to move through the fields.

-Step 5-

This record can be marked for deletion by changing the default "N" for false to "Y." If delete is changed to "Y," the database will have to be "PACKed".

"PACK" is a dBASE term, meaning records will be permanently removed from the database.

Refer to the MISCELLANEOUS MENU for instructions on "PACKing."

-Step 6-

After accepting the default "N" to keep the record or selecting "Y" to delete the record, the following message will be displayed at the bottom of the screen.

PRESS ENTER TO CONTINUE EDITING RECORDS OR X TO EXIT

-Step 7-

Press "ENTER" to continue editing records. The NOISE DOSIMETRY EDITING screen will again be displayed. Follow Steps 3 through 5 to edit more records.

Pressing "X" will exit to the DOSIMETRY MENU.

STANDARD NOISE DOSIMETRY TABLE

This menu selection provides a means to generate standard tables for enclosure into industrial hygiene survey reports. The tables provide sampling results and TWAs for specific Commands/ Activities and Shops. Stressor, Location, and Work Task can be used to further separate results and TWAs. Summaries of results and TWAs with their applicable exposure standard may be generated with the tables or without tables from this menu also.

-Step 1-

Select DOSIMETRY from the IHIMS MENU. The NOISE DOSIMETRY MENU will be displayed as below:

NOISE DOSIMETRY MENU

BREATHING ZONE **DOSIMETRY** GENERAL AREA BULK/WIPE MISC QUIT

NOISE DOSIMETRY

Add New Data
Edit Data
Standard Noise Dosimetry Table
Noise Dosimetry Summary
Print Noise Dosimetry SF 600s
==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "Standard Noise Dosimetry Table" as shown above, press "ENTER". You will be prompted to choose either a (S)ingle Command/Shop configuration or a (M)ultiple Command/Shop configuration:

(S)ingle or (M)ultiple Command or Shop ?

Press S for Single Command and Shop or M, for Multiple Command

Pressing **(S)**ingle will result in the following screen:

```
                NOISE DOSIMETRY TABLE INFORMATION
_____________________________________________________________

      Command:_______________              Shop:____________

 First Opcode:___-___-__          Second Opcode:___-___-__

       Shop Location:_____________ Include only this location ? N
            Worksite:_____________
          Occupation:_____________
                Task:_____________
Include samples after what date? 01/01/80

        Table Number:_______
         Table Title:_________________________
Minimum sample time ? 300
    Current Summary ? N
 Historical Summary ? N  Starting Date for Summary: 01/01/80
     Summaries only ? N

_____________________________________________________________
              (field definitions appear here)
```

Expanded definitions are listed below:

Command - Enter name of command for which table is desired (this field is mandatory). Command name must be the exact match for data entered into the database, and will appear in the table heading.

Second Command - For Multiple COMMAND/SHOP only. Enter second command (in computer number order). This field is optional, enter if second command data are to be listed with the first command entered.

NOTE: All commands will be included in the table that fall between the first command and the second command entered. Example: if VF 102 is the first command and VF 40 is the second, all commands between VF 102 and VF 40 would be included (e.g., VF 103, VF 39, etc.).

Shop - Enter the shop name for which table is desired (this field is mandatory). Shop

is like command and must match exactly the shop name entered into the database, and will appear in the table heading.

Second Shop - For Multiple COMMAND/SHOP only. Enter second shop (in computer number order). This field is optional, enter if second shop data are to be listed with the command(s) and other shop entered.

NOTE: All shops will be included in the table that fall between the first shop and the second shop entered. Example: if the carpenter shop is the first shop and the HT shop is the second, all shops between the carpenter and HT shop would be listed (e.g., electric, electronics, etc.).

First Opcode - Enter "OPCODE" from Appendix A for operation of interest. The first three alpha characters and second three numerical digits are required to generate a table. The last two digits (alpha or numeric) can be used to make the table more specific.

Second Opcode - Enter second "OPCODE" if more than one operations data are to be presented in the table. An example: if noise exposures were to be presented in one table for a paint and prep operation. The "OPCODE" for Painting, Spray, Compressed Air (IND-005-01) would be entered for the First Opcode and the Second Opcode for Metal Cleaning Mechanical, Sanding (IND-001-11) would be entered. If it did not matter what type of Painting and Metal Cleaning Mechanical procedures were important, the "OPCODEs" could have been entered IND-005 and IND- 001 respectively.

Table Title - Enter the title you want for your table. It will appear in the table. The table title can be 30 characters long.

Table Number - Enter the table number you want for your report. It will appear at the top of the table.

Location - Enter location of work center. It will

appear in the table.

Only this location - If default "N" is changed to "Y", only those samples where the location matches the location entered for the sample will be printed out.

Occupation - Enter occupational title if table is to be specifically for one occupation.

Task - Enter task if you want the table to only list results that meet the specific task entered.

Samples after what date ? - Only samples taken after the date entered will be listed in the table.

Minimum sample time - Default is set at 300 minutes. Only samples with a duration greater than 300 minutes will be listed on the table.

Current Summary - If default "N" is changed to "Y", a summary will be generated for the samples taken after the date entered above.

Historical Summary - If default "N" is changed to "Y", a summary will be generated for all samples taken, which meet the criteria entered above.

Summaries only - If the default "N" is changed to "Y", only summaries will be generated. No individual results will be listed.

Starting Date Historical Summary - Date after which data will be included into Historical Summary.

-Step 3-

Fill in fields with criteria desired to sort out and generate your table. Command and Shop are mandatory fields and must be entered. First Opcode, Second Opcode, Table Number, Table Title, Location, Occupation, and Task are optional fields used to further limit the range of information that will be provided in the table (making the table more specific). Examples of filled out NOISE DOSIMETRY TABLE INFORMATION screens and TABLES are provided below.

-Step 4-

After "Y" or "N" is selected for "Summaries only ?", the following message will appear on the screen:

```
____________________________________________________

        Working on the TABLE, It'll take a minute
                    Turn PRINTER on

____________________________________________________
```

-Step 5-

After a period of time (dependent on the search criteria), the following menu will appear:

```
____________________________________________________
Noise Dosimetry Output Options
---------------------------------------
Print Table From Dbase

Create WordPerfect File

Browse Results for Table
---------------------------------------
Do Another Table
---------------------------------------
==>Exit to NOISE DOSIMETRY
____________________________________________________
```

Use up and down arrow keys to select option.

Use the arrow keys to select an option. The **Print Table from Dbase** option prints the Table directly, the **Create WordPerfect File**, creates an ASCII file that will be converted to a WordPerfect format if retrieved in WordPerfect after it is generated. **Browse Results for Table**, permits observation of the samples generated by the search criteria, it also allows editing and deletion. Actions taken while in the Browse mode in this application have no effect on the main database. The **Do Another Table** option is to be used to generate a table based on different search criteria. Each of the options will be discussed briefly and examples given.

-Print Table from Dbase

Be sure printer is ON

Press any key to continue...

-Step 6-

Press any key and the table will print.

TABLE
RESULTS OF NOISE DOSIMETRY FOR
(IND-011-09)
COMMAND 1
SHOP ELECTRICAL

SAMPLE#/ DATE	EMPLOYEE/ ID	OCCUPATION/ JOB TITLE	SAMPLE TIME	8-HR TWA	WORKTASK/ OPERATION CODE	PREDOMINANT NOISE SOURCE	WORKSITE/ BUILDING
TT86-0690	W. JONES	EM1	316	81.1	ELECTRICAL MAINT.	ENGINE	ON THE DOCK
11/06/86	1591				IND-011-09		

NOTE: SAMPLE TIME EXPRESSED IN MINUTES; 8-HR TWA ARE EXPRESSED IN UNITS OF dB(A)
The asterisk (*) indicates the time weighted average exceeded the NAVOSH standard of 84 dB(A)

A table header is provided identifying the criteria listed in the table.

The first line provides the SAMPLE NUMBER, EMPLOYEE NAME, OCCUPATION (JOB TITLE), SAMPLE TIME, 8-HR TWA, WORKTASK, PREDOMINANT NOISE SOURCE (three can be listed), and WORKSITE.

The second line provides SAMPLE DATE, employee ID number (last four of SSN).

Current and Historical summaries will then print out if selected.

CURRENT TIME WEIGHTED AVERAGE SUMMARY
SAMPLES COLLECTED 6 NOVEMBER 86 TO 28 NOVEMBER 88

NAVY 8-HR TWA EXPOSURE LIMIT (dBA)	NUMBER OF SAMPLES	MEASUREMENT RANGE (dBA)	GEOMETRIC MEAN (dBA)
84	4	69.8-89.5	80.9

If there are less than three samples, no statistical analysis can be preformed and no data will be presented as shown in the following table.

CURRENT TIME WEIGHTED AVERAGE SUMMARY
SAMPLES COLLECTED 20 DECEMBER 85 TO 28 NOVEMBER 88

NAVY 8-HR TWA EXPOSURE LIMIT (dBA)	NUMBER OF SAMPLES	MEASUREMENT RANGE (dBA)	GEOMETRIC MEAN (dBA)
84	2	79.8-89.5	******

-Step 7-

After tables are printed, the following will be displayed on the screen.

Do you want to do another ? Y

Press "ENTER" to select the default "Y" to do another table.

Change the default "Y" to "N" and you will be returned to the NOISE DOSIMETRY MENU.

EXAMPLE 1

Command and shop are entered and all other fields are left blank. 01/01/86 is entered, so all samples collected after this date will be included in our table. Current and Historical summaries have been selected also.

NOISE DOSIMETRY TABLE INFORMATION

Command:**NAVCOMMAND**___ Shop:**ELECTRICAL**__

First Opcode:___-___-__ Second Opcode:___-___-__

Shop Location:_____ Include only this location ? N
Worksite:_____
Occupation:_____
Task:_____
Include samples after what date? 01/01/86

Table Number:_____
Table Title:_____
Minimum sample time ? 300
Current Summary ? Y
Historical Summary ? Y Starting Date for Summary: 01/01/80
Summaries only ? N

The following table will be generated from the criteria entered above:

TABLE
RESULTS OF NOISE DOSIMETRY FOR
COMMAND 1
SHOP ELECTRICAL

SAMPLE#/ DATE	EMPLOYEE/ ID	OCCUPATION/ JOB TITLE	SAMPLE TIME	8-HR TWA	WORKTASK/ OPERATION CODE	PREDOMINANT NOISE SOURCE	WORKSITE/ BUILDING
TT86-0690 11/06/86	W. JONES 1591	EM1	316	81.1	ELECTRICAL MAINT. IND-011-09	ENGINE	ON THE DOCK
TT87-1040 12/17/87	W. SMITH 7062	EM1	340	69.8	ELECTRICAL MAINT. IND-011-09	ENGINE	SHOP
TT88-1452 11/28/88	D. DOE 1568	EM1	364	89.5 *	SUPERVISOR SHOP PRO-002-01	RADIO DIESEL ENG	SHOP
TT88-1451 11/28/88	S. MILLER 5354	EM2	362	84.7 *	ADMIN PRO-002-99	RADIO	SHOP

NOTE: SAMPLE TIME EXPRESSED IN MINUTES; 8-HR TWA ARE EXPRESSED IN UNITS OF dB(A)
The asterisk (*) indicates the time weighted average exceeded the NAVOSH standard of 84 dB(A)

CURRENT TIME WEIGHTED AVERAGE SUMMARY
SAMPLES COLLECTED 6 NOVEMBER 86 TO 28 NOVEMBER 88

NAVY 8-HR TWA EXPOSURE LIMIT (dBA)	NUMBER OF SAMPLES	MEASUREMENT RANGE (dBA)	GEOMETRIC MEAN (dBA)
84	4	69.8-89.5	80.9

HISTORICAL TIME WEIGHTED AVERAGE SUMMARY
SAMPLES COLLECTED 20 DECEMBER 85 TO 28 NOVEMBER 88

NAVY 8-HR TWA EXPOSURE LIMIT (dBA)	NUMBER OF SAMPLES	MEASUREMENT RANGE (dBA)	GEOMETRIC MEAN (dBA)
84	5	69.8-89.5	79.2

EXAMPLE 2

Command and shop are entered and all other fields are left blank. 01/01/88 is entered, so all samples collected after this date will be included in our table. Only the Current summary (for "Samples After What Date?") has been selected this time. Only results and current summary will be printed:

NOISE DOSIMETRY TABLE INFORMATION

Command:**NAVCOMMAND**___ Shop:**ELECTRICAL**__

First Opcode:___-___-__ Second Opcode:___-___-__

Shop Location:_____ Include only this location ? N

Worksite:_____
Occupation:_____
Task:_____
Include samples after what date? 01/01/88

Table Number:_____
Table Title:_____
Minimum sample time ? 300
Current Summary ? Y
Historical Summary ? N Starting Date for Summary: 01/01/80
Summaries only ? N

The following table will be generated from the criteria from the previous entry screen:

TABLE
RESULTS OF NOISE DOSIMETRY FOR
COMMAND 1
SHOP ELECTRICAL

SAMPLE#/ DATE	EMPLOYEE/ ID	OCCUPATION/ JOB TITLE	SAMPLE TIME	8-HR TWA	WORKTASK/ OPERATION CODE	PREDOMINANT NOISE SOURCE	WORKSITE/ BUILDING
TT88-1452 11/28/88	D. DOE 1568	EM1	364	89.5 *	SUPERVISOR SHOP PRO-002-01	RADIO DIESEL ENG	SHOP
TT88-1451 11/28/88	S. MILLER 5354	EM2	362	84.7 *	ADMIN PRO-002-99	RADIO	SHOP

NOTE: SAMPLE TIME EXPRESSED IN MINUTES; 8-HR TWA ARE EXPRESSED IN UNITS OF dB(A)
The asterisk (*) indicates the time weighted average exceeded the NAVOSH standard of 84 dB(A)

CURRENT TIME WEIGHTED AVERAGE SUMMARY
SAMPLES COLLECTED 6 NOVEMBER 86 TO 28 NOVEMBER 88

NAVY 8-HR TWA EXPOSURE LIMIT (dBA)	NUMBER OF SAMPLES	MEASUREMENT RANGE (dBA)	GEOMETRIC MEAN (dBA)
84	2	84.7-89.5	******

EXAMPLE 3

Command and shop are entered and all other fields are left blank. 01/01/86 is entered, so all samples collected after this date will be included in our table. Current and Historical summaries have been selected as well as summaries only. Only the summaries will be printed.

NOISE DOSIMETRY TABLE INFORMATION

Command:**NAVCOMMAND**___ Shop:**ELECTRICAL**__

First Opcode:___-___-__ Second Opcode:___-___-__

Shop Location:_____ Include only this location ? N
Worksite:_____
Occupation:_____
Task:_____
Include samples after what date? 01/01/86

Table Number:_____
Table Title:_____
Minimum sample time ? 300
Current Summary ? N
Historical Summary ? N Starting Date for Summary: 01/01/80
Summaries only ? N

The following table will be generated from the criteria entered above:

CURRENT TIME WEIGHTED AVERAGE SUMMARY
SAMPLES COLLECTED 6 NOVEMBER 86 TO 28 NOVEMBER 88

NAVY 8-HR TWA EXPOSURE LIMIT (dBA)	NUMBER OF SAMPLES	MEASUREMENT RANGE (dBA)	GEOMETRIC MEAN (dBA)
84	4	69.8-89.5	80.9

HISTORICAL TIME WEIGHTED AVERAGE SUMMARY
SAMPLES COLLECTED 20 DECEMBER 85 TO 28 NOVEMBER 88

NAVY 8-HR TWA EXPOSURE LIMIT (dBA)	NUMBER OF SAMPLES	MEASUREMENT RANGE (dBA)	GEOMETRIC MEAN (dBA)
84	5	69.8-89.5	79.2

(M)ultiple Command or Shop

NOTE: For Command, Shop, and Opcode entry: Entry must be made in computer logic order (Numeric alphabetical)! Example: Command VF-102 would need to be entered into the first Command field because in computer language it comes before VF-40. The "VF-" is

the same for both; the computer looks at the next letter/ number "1" or "4"; and "1" comes before "4," therefore, VF-102 is before VF-40 in computer order.

EXAMPLE 1

```
                    NOISE DOSIMETRY TABLE INFORMATION
____________________________________________________________________

First Command:_______________    Second Command:_______________
   First Shop:_______________       Second Shop:_______________
 First Opcode:___-___-__          Second Opcode:___-___-__

       Shop Location:_____________ Include only this location ? N
            Worksite:_____________
          Occupation:_____________
                Task:_____________
Include samples after what date? 01/01/86

        Table Number:_______
         Table Title:_______________________
Minimum sample time ? 300
   Current Summary ? N
Historical Summary ? N  Starting Date for Summary: 01/01/80
    Summaries only ? N

____________________________________________________________________
```

Fill in fields with criteria desired to generate the table desired. First Command, Shop, and Opcode are mandatory, second Command, Shop, or Opcode are optional. Table Number, Table Title, and Location are needed for table header but can be left blank. Occupation and Task are used to make the table more specific, otherwise leave blank.

Enter a date or leave the default date (01/01/80) in the "after what date?" field, and select desired summaries.

NOISE DOSIMETRY TABLE INFORMATION

```
First Command:COMMAND1_______    Second Command:COMMAND2________
   First Shop:ELECTRICAL_____       Second Shop:_______________
 First Opcode:IND-011-__          Second Opcode:___-___-__

       Shop Location:X-22_________ Include only this location ? N
            Worksite:_____________
          Occupation:_____________
                Task:_____________
Include samples after what date? 01/01/87

        Table Number:EX-1______
         Table Title:EXAMPLE 1_____________
Minimum sample time ? 300
   Current Summary ? N
Historical Summary ? N  Starting Date for Summary: 01/01/80
    Summaries only ? N
```

After "Y' or "N" is selected for the Summaries, the program will tell you "Working on the table". You will then see the following message on the screen:

```
                                  ________________________________

                                      Be sure printer is ON

                                  ________________________________

Press any key to continue...
```

-Step 4-

Press any key and the table will print.

TABLE EX-1
RESULTS OF NOISE DOSIMETRY FOR
EXAMPLE 1
(IND-011-09)

SAMPLE#/ DATE	EMPLOYEE/ ID	COMMAND/ SHOP	SAMPLE TIME	8-HR TWA	WORKTASK JOB TITLE	PREDOMINANT NOISE SOURCE	WORKSITE OPERATION CODE
TT87-1040 12/17/87	W. JONES 7062	COMMAND 2 ELECTRICAL	340	69.8	ELECTRICAL MAINT. EM1		SHOP IND-011-09
TT87-1041 12/17/87	W. SMITH 6519	COMMAND 1 ELECTRICAL	348	90.1 *	ELECTRIC GEAR ON BOAT ICFN	ENGINE MIG WELDING	BOAT IND-011-09
TT87-1042 12/17/87	D. DOE 1286	COMMAND 1 ELECTRICAL	350	66.4	ELEC GEAR ON BOAT EM2	MIG WELDING	SHOP/BOAT IND-011-09
TT87-1043 12/17/87	S. MILLER 1038	COMMAND 1 ELECTRICAL	345	67.6	ELECTRIC GEAR ON BOAT EM3	MIG WELDING	BOAT IND-011-09

NOTE: SAMPLE TIME EXPRESSED IN MINUTES; 8-HR TWA ARE EXPRESSED IN UNITS OF dB(A)
The asterisk (*) indicates the time weighted average exceeded the NAVOSH standard of 84 dB(A)

CURRENT SURVEY TIME WEIGHTED AVERAGE SUMMARY
SAMPLES COLLECTED ON 17 DECEMBER 87

NAVY 8-HR TWA EXPOSURE LIMIT (dBA)	NUMBER OF SAMPLES	MEASUREMENT RANGE (dBA)	GEOMETRIC MEAN (dBA)
84	4	66.4-90.1	72.9

HISTORICAL TIME WEIGHTED AVERAGE SUMMARY
SAMPLES COLLECTED 6 NOVEMBER 86 TO 17 DECEMBER 87

NAVY 8-HR TWA EXPOSURE LIMIT (dBA)	NUMBER OF SAMPLES	MEASUREMENT RANGE (dBA)	GEOMETRIC MEAN (dBA)
84	5	66.4-90.1	74.5

Create WordPerfect File

Selection of this option will create an ASCII file that may be converted to a word processing file. It is certain that WordPerfect will accept the file and successfully convert it. Other word processing packages probably will also work.

Upon selection, the following message will appear:

Enter Path and File Name: A:

Enter Path and File Name; e.g. SIMA.TAB

Enter Path and File Name: A:SIMA.TAB

After pressing "ENTER" the following message is displayed:

Creating WordPerfect File

When the file is complete, you will be returned to the Air Sample Table for Report Submenu.

Browse Results for Table

Selection of this option allows the user to browse the records that have been selected on the basis of the user defined search criteria. The dBase IV Browse mode is used for this operation. Once the Browse screen is available, all dBase functions permitted in the Browse mode are available. These functions are menu driven and are accessible by pressing **F10**. The primary functions allowed are editing and deleting, however any function on the menu is permitted. Any actions taken to modify data will not affect the main database from which these records were obtained.

Upon pressing **Browse Results for Table**, the following menu appears:

View Current Samples

View Historical Samples

==>Exit View Menu

The two choices available relate to the "**Include samples after what date field ?"** and the "**Starting Date for Historical Summary:**" fields. "**View Current Samples"** presents all samples meeting the search criteria for **after** the "**Include samples after what date ?**" field entry. "**View Historical Samples**" presents all samples meeting the search criteria and starting **after** the entry in the "**Starting Date for Historical Summary:** " field.

NOISE DOSIMETRY SUMMARY

This table can be used as a management tool to identify what sampling has been performed in each command, and identify what sampling needs to be done. The table can be very broad and list all samples taken for a command, or to very specific to list only those samples that meet the criteria of command, shop, opcode, occupation, worksite, location, and task. A statistical analysis is performed using a one-sided tolerance limit test for the data desired.

-Step 1-

Select DOSIMETRY from the IHIMS MENU. The NOISE DOSIMETRY MENU will be displayed as below:

NOISE DOSIMETRY MENU

BREATHING ZONE	**DOSIMETRY**	GENERAL AREA	BULK/WIPE	MISC	QUIT
	NOISE DOSIMETRY				
	Add New Data				
	Edit Data				
	Standard Noise Dosimetry Table				
	Noise Dosimetry Summary				
	Print Noise Dosimetry SF 600s				
	==> Exit to Main Menu				

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "Noise Dosimetry Summary" as shown above, press "ENTER". The Noise Dosimetry Summary Population Definition screen will be display as below:

NOISE DOSIMETRY SUMMART POPULATION DEFINITION

```
       Command: _ ____________________
          Shop: _ ____________________
     Operation: _ ____________________
      Location: ________________
      Worksite: ________________
        Opcode: ___-___-__
          Task: ______________________
   Sample Time: 300
 Starting Date: 01/01/80
   Ending date: 04/17/90

  Everything OK ? Y

        (field definitions appear here)
```

Expanded field definitions are listed below:

COMMAND - Enter name of command. A table will be generated that lists all results for this command. Enter "S" in the first field to include similar commands, i.e. SIMA, VF, VAW

SHOP - Enter the Shop name. A table will be generated that lists all results for this shop. Enter "W" in the first field to include shops in a division, i.e. 67 for 67A, 67B

OCCUPATION - TWA summaries will be generated for samples on individuals who are identified as having the occupation entered and statistical analysis performed on the data. Enter "W" in the first field to include occupations that are similar.

LOCATION - TWA summaries will be generated for samples taken at the specific location entered and statistical analysis performed on the data.

WORKSITE - TWA summaries will be generated for samples taken at the specific worksite entered and statistical analysis performed on the data.

OPCODE - TWA summaries will be generated for samples taken for the opcode entered and statistical analysis performed on the data. Enter "OPCODE" from Appendix A. The first three alpha characters and the second three numerical digits are required to generate a

table. The last two digits can be used to make the table more specific.

TASK - TWA summaries will be generated for samples taken while individuals performed the specific task entered and statistical analysis performed on the data.

SAMPLE TIME - Minimum time required for TWA data to be included in the summary table. 300 minutes is the default entry, selected by consensus as a good representative noise dosimetry sample. All samples greater than 300 minutes will be included in summary.

STARTING DATE - Data only collected after date entered will be included in the summary table.

ENDING DATE - Data collected before this date will be included in the summary.

-Step 3-

Fill in fields with criteria desired to generate the TWA summary desired. After "Y" or "N" entered for "list of samples" the following message will appear on the screen.

After a period of time (dependent on the search criteria), the following menu will appear:

Output Options

Print Noise Dosimetry Results

Print Statistical Summary

Browse Noise Dosimetry Results

Define Population for Table

==>Exit to Noise Dosimetry

Use up and down arrow keys to select option

Use the arrow keys to select an option. The **Print Noise Dosimetry Results** option prints the Table directly, **Print Statistical Summary** prints the Geometric Mean and Geometric Standard Deviation for the TWA's (must be 3 TWA's to calculate). **Browse Noise Dosimetry Results**, permits observation of the samples generated by the search criteria, it also allows editing and deletion. Actions taken while in the Browse mode in this application have no effect on the main database. The **Define Population for Table** option is to be used to generate a table based on different search criteria. Each of the options will be discussed briefly and examples given.

- **Print Table from Dbase**

Fill in the NOISE DOSIMETRY SUMMARY POPULATION DEFINITION screen. Select Print Table from Dbase from the Output Options Menu and press enter. The folowing table will print:

NOISE DOSIMETRY SUMMARY FOR
"COMMAND NAME"
PREPARED "DATE"

SAMPLE#	DATE	SHOP	OCCTITLE	WORKSITE	OPCODE	TASK	TIME	TWA
TT87-1041	12/17/87	ELECTRICAL	ICFN	BOAT	IND-011-09	ELECTRIC GEAR ON BOAT	348	90.1
TT87-1042	12/17/87	ELECTRICAL	EM2	SHOP/BOAT	IND-011-09	ELEC GEAR ON BOAT	350	66.4
TT87-1043	12/17/87	ELECTRICAL	EM3	BOAT	IND-011-09	ELECTRIC GEAR ON BAOT	345	67.6

- **Print Statistical Summary**

Fill in the NOISE DOSIMETRY SUMMARY POPULATION DEFINITION screen. Select Print Statistical Summary from the Output Options Menu and press enter.

The next screen will ask - "Print Summary for each shop ? N". Changing the default "N" to "Y" will print the data out by shop. An example of the summary follows:

NOISE DOSIMETRY SUMMARY BY SHOP FOR

"COMMAND NAME"

PREPARED "DATE"

SHOP	DATES OF SAMPLES	NUMBER OF SAMPLES	MEASUREMENT RANGE (dBA)	GM (dBA)	GSD	95th PCTL (dBA)	PN %	TS	OTL EVAL	OTL N
ELECTRICAL	11/06/86 TO 11/28/88	5	69.8- 89.5	79.2	1.110	94.0	28.4	0.57	U	0
ELECTRONICS	12/16/87 TO 11/29/88	6	66.1- 75.2	71.1	1.052	77.3	< 0.1	3.27	FA	2
ENGINE	11/06/86 TO 11/28/88	5	82.3- 88.6	85.1	1.027	88.9	67.7	-.46	U	0
HT	12/17/87 TO 11/28/88	3	76.3- 91.2	83.9	1.094	97.3	49.6	0.01	U	0
WEAPONS MAINT.	12/16/87 TO 11/28/88	5	67.7- 95.2	81.5	1.160	104.1	42.1	0.20	U	0

Header Definitions

SHOP - Shop where individuals who were sampled are assigned.

DATES OF SAMPLES - Inclusive dates samples have been taken.

NUMBER OF SAMPLES - Number of samples for this shop taken within the inclusive dates.

MEASUREMENT RANGE - Range of dosimetry TWAs.

GM - Geometric Mean for the TWAs. Must have 3 TWAs to calculate.

GSD - Geometric Standard Deviation for TWAs. Must have 3 to calculate.

- Browse Noise Dosimetry Results

Selection of this option allows the user to browse the records that have been selected on the basis of the user defined search criteria. The dBase IV Browse mode is used for this operation. Once the Browse screen is available, all dBase functions permitted in the Browse mode are available. These functions are menu driven and are accessible by pressing **F10**. The primary functions allowed are editing and deleting, however, any function on the menu is permitted. Any actions taken to modify data will not affect the main database from which these records were obtained.

DOSIMETRY SF 600s

-Step 1-

Select DOSIMETRY from the IHIMS MENU. The DOSIMETRY MENU will be displayed as below:

NOISE DOSIMETRY MENU

BREATHING ZONE	**DOSIMETRY**	GENERAL AREA	BULK/WIPE	MISC	QUIT
NOISE DOSIMETRY					

Add New Data
Edit Data
Standard Noise Dosimetry Table
Noise Dosimetry Summary
Print Noise Dosimetry SF 600s
==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "Print Noise Dosimetry SF 600s" (as shown above), press "ENTER". The following screen will then be displayed:

Do Noise SF 600s ? (Y/N) N

-Step 3-

Change default "N" to "Y" and press "ENTER" to start SF 600s. If you have changed your mind, change the default "Y" to "N" to get back to the DOSIMETRY MENU. If "ENTER" is pressed, the following message will be displayed on the screen:

(E)ntire set or (I)ndividual? E

Press enter for entire set, or change default to "I" to print an individual health record. You may opt to print one health record based on the sample number.

Working on the SF 600s, It'll be a minute

-Step 4-

After a few minutes (depends on the size of your database), the following message will be displayed on the screen:

"There are (some number) samples to print
It will take about (some number) minutes to print
Press any key to continue..."

-Step 5-

After pressing "any key", the following message will appear on the screen:

Be sure printer is on

Press any key to continue...

-Step 6-

Pressing "any key" will start the printing of SF 600s for Dosimetry Samples.

When the SF 600s are finished printing, the following message will be displayed:

Everything OK ? (Y/N) Y

You are being asked if all of the SF 600s look all right. Are they on one sheet of paper? Did they print or did the ribbon jump off track? Did the printer ribbon skip? In other words, do the SF 600s look good enough to put into the individuals' medical records.

The program gives you a second chance if there was a mechanical problem and the SF 600 needs to be redone. If the SF 600s need to be redone, change the default "Y" to "N" and press "ENTER". The process can be repeated after repairing your mechanical problems.

Once "ENTER" has been pressed with the default "Y" selected, the records are marked to insure that once an SF 600 has been printed for an individual sampled on a specific date, a second SF 600 will not be generated for the same sample. The following message will also appear: "Will now print a list of sample numbers, by command" ; "Press any key ... ." A list will be printed with the sample numbers for the SF 600s just generated.

After list is printed, you will be returned to the DOSIMETRY MENU.

An example of a computer generated SF 600 is presented on the following page:

HEALTH RECORD	CHRONOLOGICAL RECORD OF MEDICAL CARE
DATE	Symptoms,Diagnosis,Treatment,Treating Organization (SIGN EACH ENTRY)
NAVHOSP PORTSMOUTH	INDUSTRIAL HYGIENE NOISE DOSIMETRY DATA
SAMPLING DATE	COMMAND: PWC SHOP: WC 413.1 NAVY STANDARD IS 84 dBA
	OCCUPATION/JOB TITLE: ENGINEERING TECHNICIAN LOCATION: BUILDING Z-140
	SAMPLE NUMBER | WORK TASK | NOISE SOURCE | TIME | 8-HR TWA | HEARING PROTECTION
13 May 91	SP91-0492 | CRANE INSPECTION/CERT | DIE

SEL FRKL | 336 | 86.3 dBA | PLUGS

INDUSTRIAL HYGIENIST

RECORDS MAINTAINED AT:>|BRANCH MEDICAL CLINIC NAVAL STATION NORFOLK

PATIENT'S NAME: WILLIAMS J. | SEX

RELATIONSHIP TO SPONSOR |STATUS |RANK/GRADE

SPONSOR'S NAME |ORGANIZATION: PWC

DEPART./SERVICE | SSN/IDENTIFICATION NO. 000-00-0000 |DATE OF BIRTH

CHRONOLOGICAL RECORD OF MEDICAL CARE STANDARD FORM 600

SECTION 3

GENERAL AREA

-Step 1-

Select GENERAL AREA from the IHIMS MENU. The GENERAL AREA MENU will be displayed as below:

GENERAL AREA MENU

BREATHING ZONE DOSIMETRY **GENERAL AREA** BULK/WIPE MISC QUIT

GENERAL AREA SAMPLES

Enter General Area Samples

Edit General Area Samples

General Area Sample Table

==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

A brief description of the options from the GENERAL AREA MENU are listed below:

Enter General Area Samples - Enter background sampling information. Results may also be entered if received from the laboratory. If results are not available, enter just background and CAS Number(s) for stressor(s). When results are received, use "Edit General Area Samples" to enter results.
Pg. 3-3

Edit General Area Samples - Used to edit background and results data. Sample numbers are used to access data records.
Pg. 3-14
- Used to delete a record.
Pg. 3-15
- Used to add stressor.

Pg. 3-17

General Area Sample Table - Generates a sample table sorted by Command and Shop (work center) for entry into survey report.
Pg. 3-20

==> Exit to Main Menu - Exit to IHIMS MENU.

ENTER GENERAL AREA SAMPLES

-Step 1-

Select GENERAL AREA from the IHIMS MENU. The GENERAL AREA MENU will be displayed as below:

GENERAL AREA MENU

BREATHING ZONE **DOSIMETRY** **GENERAL AREA** BULK/WIPE MISC QUIT

GENERAL AREA SAMPLES

Enter General Area Samples

Edit General Area Samples

General Area Sample Table

==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "Enter General Area Samples" as shown above press "ENTER". The following GENERAL AREA AIR SAMPLE DATA ENTRY screen will be displayed:

```
GENERAL AREA AIR SAMPLE DATA ENTRY SCREEN          Date of Sampling:06/03/90

Activity:_________________ Shop:_____________  Location:___________
                      Worksite:_____________
                         Shift:1
        Frequency of Operation:1      Duration of Operation:1
 Opcode:___-___-__
 Material Used:_____________________  Ventilation:_________________
 Material Used:_____________________  Meet Specs ?__  Used ? N

                   Sampler:___
             Sample Number:____-____
                      Task:__________________
      Distance from Source:____
                  Boundary:_
           Sample Duration:___
               Sample Type:__

                 Date Sent:06/03/90     Date Analyzed:06/03/90
```

(field definitions appear here)

-Step 3-

Fill in the data fields. Notice after entering the "OPCODE," a description of the code will be displayed next to the "OPCODE." Check description to insure it matches the "OPCODE" entered.

NOTE: ACTIVITY, SHOP, LOCATION, WORKSITE, OPCODE, SAMPLER, SAMPLE NUMBER, TASK, DISTANCE FROM SOURCE, and SAMPLE DURATION fields on this screen are mandatory. If left blank by pressing "ENTER" or trying to use the cursor keys to move out of the field, a bell will sound and a message will be displayed at the bottom of the screen. Once a field has been filled out, the cursor keys can be used to go back and change field information.

If the sample number you tried to enter matches one already in the database, a bell will sound and a message will appear stating this is a duplicate sample number. No two sample numbers can be exactly the same.

Field definitions are at the bottom of the screen. The following are expanded definitions:

Date - Date of sample (MM/DD/YY). The default is the current computer date.

Activity - Name of command of sampled individual (must always be the same for a specific command. Information is sorted by command to produce tables, therefore the name used for a command must be exactly the same).

Shop - Shop name or code. (Like command, Shop must be entered exactly the same each time. Shop is used to sort information.)

Location - Location of shop (work center).

Worksite - Location where sampling occurred. Include as much information as necessary to identify where sampled operation occurred.

Shift - Use the following number codes:
1 = Day 2 = Evening 3 = Night

Frequency of Operation - Use the following number codes:

1 = Daily	2 = 2-3 Times/Week
3 = Weekly	4 = 2-3 Times/Month
5 = Monthly	6 = 2-3 Times/year
7 = Yearly	8 = Special Occasions

Duration of Operation - Use the following number codes:

1 = < 1 Hour	2 = 1-4 Hours
3 = 4-8 Hours	4 = > 8 Hours

Opcode - See Appendix A for a list of current opcodes.

Enter "OPCODE" from Appendix A which best describes the operation sampled. After entering an "OPCODE", a description of the opcode will appear. If the description does not match the operation sampled, cursor to the "OPCODE" field, check Appendix A, and enter the new/correct opcode.

If a nonexistent "OPCODE" is entered, the following message will appear: "NO SUCH NUMBER,

TRY AGAIN". Press the space bar to clear and reenter new/current "OPCODE." If an illegal value is entered, a message will appear at the bottom of the screen.

Material Used - List material/chemical used. Space is provided for two materials.

Ventilation - Type of ventilation: General, Lateral Slot, etc. The following pop up menu will appear, after pressing "ENTER" in this data entry field, to allow a standardized description to be entered.

Selections may be made from this pop up menu by placing the light bar on the desired selection and pressing "ENTER", or by pressing the corresponding letter of a choice.

Ventilation Types

a. Natural
b. General
c. Small Booth
d. Large Booth, non-walk in
e. Large Booth, walk in
f. Canopy Hood
g. Glove Box
h. Laboratory Hood
i. Free Hanging
j. Lateral Slot
k. Push-Pull
l. Downdraft
m. Metalworking/Woodworking
n. Low volume-high velocity

Meet Specs - Default is blank, can be left blank; "Y" for yes; "N" for no.

Used - Default is "N" for no; "Y" for yes.

Sampler - Initials of individual doing the sampling (Industrial hygienist; Technician ; or other.) Should be consistent for any individual.

Sample Number - Sample number is an eight character code divided into several parts. "TT90-0001." The "TT" is an alpha code to identify section/group collecting sample. The "90" is for the year. The "0001" is the number of the sample ranging from

0001 to 9999.

If a given sample number has already been used, a bell will sound and a message will appear at bottom of screen. Duplicate sample numbers will not be accepted.

Task - Further description of the job being performed, e.g., IND-011-08 (SMAW) is opcode. Task may be on painted metal, confined space or in barge. Standardization of task within your community may help future sorting capabilities.

Distance from Source - Distance sample is from generating source (in feet).

Boundary - Sample relation to any boundary. "N" for no boundary is the default value.

- "I" Sample taken inside of boundary.

- "O" Sample taken outside of boundary.

Sample Duration - Sample time in minutes.

Sample Type - Description of sample.

- GA General Area sample.

- GX Entered if sample is invalid.

Date Sent - Date sample sent out for analysis.

Date Analyzed - Date lab analyzed (signature date).

Notice that "Date Sent" and "Date Analyzed" will have the current computer date displayed. These dates should be replaced with the actual dates samples are submitted and analyzed.

Example of filled in entry screen:

```
GENERAL AREA AIR SAMPLE DATA ENTRY SCREEN          Date of Sampling:06/03/90

Activity:_________________ Shop:_____________  Location:___________
                      Worksite:_____________
                         Shift:1
        Frequency of Operation:1      Duration of Operation:1
 Opcode:IND-011-13   ELECTRICAL SOLDERING
 Material Used:60/40 SOLDER_______  Ventilation:GENERAL ____
 Material Used:____________________  Meet Specs ?Y_  Used ? Y

                    Sampler:JEB
              Sample Number:TT90-0070
                       Task:ELEC. SOLDERING___
      Distance from Source:5____
                  Boundary:N
          Sample Duration:100
              Sample Type:GA
                Date Sent:06/03/90      Date Analyzed:06/03/90
```

-Step 4-

After all information has been entered, the following screen will be displayed:

```
            INDUSTRIAL HYGIENE RESULTS ENTRY SCREEN
         ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0070

CAS NUMBER    STRESSOR NAME                Q  RESULT  UNIT  OK

Enter the CAS number for the stressor being entered, press enter when finished
```

NOTE: The following procedure is used if background and results are being entered at the same time (sampling results have

been received from the laboratory). If results have not been received and background only is being entered, skip to step 12, "IF RESULTS NOT AVAILABLE WHEN ENTERING BACKGROUND INFORMATION," for input sequence when results are not available.

-Step 5-

Enter the CAS number for the stressor sampled into the shadow box area. Stressor CAS numbers are listed in Appendix B.

-Step 6-

When the CAS number is entered and "ENTER" is pressed, the STRESSOR NAME will appear along with blank areas for Q (qualifier - <, >, or blank), RESULT, UNIT, and verifier (OK). UNIT will default to MG/M3 (all units are maintained as MG/M3 not PPM), however units should be changed to F/CC for asbestos. Enter qualifier, result and units. If entry is correct, press "ENTER" with the cursor under OK with the default Y for yes. If an error has been made enter "N" under OK and press "ENTER" to reenter.

Example of filled out screen:

INDUSTRIAL HYGIENE RESULTS ENTRY SCREEN
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0070

CAS NUMBER	STRESSOR NAME	Q	RESULT	UNIT	OK
7439-92-1	LEAD	<	0.0020	MG/M3	Y

-Step 7-

The shadow box will appear for a second CAS number. A second CAS number can now be entered. The input sequence is the same as above (steps 5 & 6).

INDUSTRIAL HYGIENE RESULTS ENTRY SCREEN
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0070

CAS NUMBER	STRESSOR NAME	Q	RESULT	UNIT	OK

7439-92-1	LEAD	<	0.0020	MG/M3	Y
7440-36-0	ANTIMONY	<	0.0010	MG/M3	Y

-Step 8-

The shadow box will appear for a third CAS number (six CAS numbers may be entered). If no more CAS numbers are to be entered, press "ENTER" with the cursor in the shadow box to complete entry sequence.

-Step 9-

The next screen (EXIT screen) gives you several options:

PRESS RETURN TO CONTINUE ADDING RECORDS
C, TO CARRY DATA, OR X TO EXIT

Press "ENTER" to get another blank "GENERAL AREA AIR SAMPLE DATA ENTRY SCREEN". Fill out new form the same as outlined in steps 3 through 8.

The "C" to carry function carries all data fields to the next record except Sample Number, Distance from Source, Boundary, Sample Duration. The top half of the entry screen will be displayed first. Press "ENTER" to accept displayed data, or over type with new/changed information. After the "OPCODE" is accepted or changed, as described in step 4, the bottom half of the screen will be displayed. Make changes as required or accept the data by pressing "ENTER" (this saves many key strokes and time). Continue to step 10 to utilize the carry function.

Pressing "X" will exit back to the GENERAL AREA SAMPLES MENU.

THE CARRY FUNCTION

NOTE: DO NOT USE THE "PgUp" OR PgDn" KEYS! Record will be lost. It can not be corrected using the IHIMS program.

-Step 10-

The following screen will be displayed if "C" for carry is pressed in step 9 after entering the above example:

```
GENERAL AREA AIR SAMPLE DATA ENTRY SCREEN          Date of Sampling:06/03/90

Activity:_________________ Shop:_____________  Location:___________
                      Worksite:_____________
                         Shift:1
        Frequency of Operation:1      Duration of Operation:1
 Opcode:IND-011-13   ELECTRICAL SOLDERING
 Material Used:60/40 SOLDER_______  Ventilation:GENERAL ____
 Material Used:____________________  Meet Specs ?Y_  Used ? Y

                    Sampler:JEB
             Sample Number:____-____
                      Task:ELEC. SOLDERING___
      Distance from Source:____
                  Boundary:_
           Sample Duration:__0
               Sample Type:GA
                 Date Sent:06/03/90      Date Analyzed:06/03/90
```

Notice that Sample Number, Distance from Source, and Boundary Fields are blank and Sample Duration has a 0. These are the only differences between the original screen and the "C" carry screen. These four fields must be entered with different data from the original. All other fields could possibly contain the same data.

-Step 11-

Press "ENTER" to accept displayed data (this saves a lot of key strokes and time), or overtype with new/changed information then press "ENTER". New Sample Number and Sample Duration must be entered for each entry screen.

The results screen will be displayed after the "Date Analyzed" field is filled in or cursor through. Fill in "INDUSTRIAL HYGIENE RESULTS ENTRY SCREEN" as described in steps 4 through 8.

IF RESULTS NOT AVAILABLE WHEN ENTERING BACKGROUND INFORMATION

-Step 12-

After all background information has been entered, the following screen will be displayed:

INDUSTRIAL HYGIENE RESULTS ENTRY SCREEN
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0001

CAS NUMBER	STRESSOR NAME	Q	RESULT	UNIT	OK

Enter the CAS number for the stressor being entered, press enter when finished

-Step 13-

Enter the CAS number for the stressor sampled into the shadow box area. Stressor CAS numbers are listed in Appendix B.

When the CAS number is entered and "ENTER" is pressed, the STRESSOR NAME will appear along with blank areas for Q (qualifier, <, >, or blank), RESULT, UNIT, and OK (verifier). Press "ENTER" or cursor through the Q, RESULT, UNIT fields to get to the OK field. If the correct stressor name is displayed for the CAS number entered, press "ENTER" to accept the default "Y" for true under the OK field. If the CAS number does not match the STRESSOR NAME, enter "N" for no under OK and press "ENTER" to clear. Reenter correct CAS number.

Example of filled out screen:

INDUSTRIAL HYGIENE RESULTS ENTRY SCREEN
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0001

CAS NUMBER	STRESSOR NAME	Q	RESULT	UNIT	OK
7439-92-1	LEAD			MG/M3	Y

-Step 14-

The shadow box will appear for a second CAS number. A second CAS number can now be entered. The input sequence is the same as above.

INDUSTRIAL HYGIENE RESULTS ENTRY SCREEN
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0001

CAS NUMBER	STRESSOR NAME	Q	RESULT	UNIT	OK
7439-92-1	LEAD			MG/M3	Y
7440-36-0	ANTIMONY			MG/M3	Y

-Step 15-

The shadow box will appear for a third CAS number (six CAS numbers may be entered). If no more CAS numbers are to be entered press "ENTER" with the cursor in the shadow box to complete entry sequence.

-Step 16-

The next screen (EXIT screen) gives you the three options, as in step 11, ("C" (carry), "ENTER" (new screen), or "X" to exit Background/Results procedure to the GENERAL AREA SAMPLE MENU.

EDIT GENERAL AREA SAMPLES

-Step 1-

Select GENERAL AREA from the IHIMS MENU. The GENERAL AREA MENU will be displayed as below:

```
                          GENERAL AREA MENU
═══════════════════════════════════════════════════════════════════════════
BREATHING ZONE   DOSIMETRY   GENERAL AREA   BULK/WIPE   MISC   QUIT
                             GENERAL AREA SAMPLES

                             Enter General Area Samples

                             Edit General Area Samples

                             General Area Sample Table

                             ==> Exit to Main Menu

       Use the up and down cursor keys to choose an option from this menu
═══════════════════════════════════════════════════════════════════════════
```

-Step 2-

With the shadow bar on "Edit General Area Samples" as shown above, press "ENTER." The SAMPLE NUMBER EDIT screen will then be displayed:

```
═══════════════════════════════════════════════════════════════════════════
                    GENERAL AREA SAMPLE EDITING
       ENTER SAMPLE NUMBER TO EDIT OR PRESS ENTER TO QUIT
═══════════════════════════════════════════════════════════════════════════

              ENTER SAMPLE NUMBER TO EDIT     -
```

-Step 3-

Enter sample number to be edited. Sample Number TT90-0070 will be used in this example.

```
GENERAL AREA SAMPLE EDITING
ENTER SAMPLE NUMBER TO EDIT OR PRESS ENTER TO QUIT

ENTER SAMPLE NUMBER TO EDIT TT90-0070
```

The first screen to be displayed will be the background data entry screen.

Example of a filled out data entry screen:

```
GENERAL AREA AIR SAMPLE DATA ENTRY SCREEN          Date of Sampling:06/03/90

Activity:_________________ Shop:_____________  Location:___________
                      Worksite:_____________
                         Shift:1
        Frequency of Operation:1      Duration of Operation:1
 Opcode:IND-011-13   ELECTRICAL SOLDERING
 Material Used:60/40 SOLDER_______  Ventilation:GENERAL ____
 Material Used:____________________  Meet Specs ?Y_  Used ? Y

                    Sampler:JEB
              Sample Number:TT90-0070
                       Task:ELEC. SOLDERING___
      Distance from Source:5____
                  Boundary:N
          Sample Duration:100
              Sample Type:GA
                Date Sent:06/03/90      Date Analyzed:06/03/90
```

-Step 4-

Data are accepted by pressing "ENTER" or using the up/down and the right/left cursor keys to pass through the data fields.

NOTE: ALL INFORMATION FOR THIS SAMPLE NUMBER MAY BE DELETED BY CHANGING THE DEFAULT "N" TO "Y". The database record will be

marked for deletion, the information for this sample number will not be used to generate tables. The database will need to be "PACKed" (see step 16).

-Step 5-

After pressing "ENTER" or cursoring past the Date Analyzed field in the "INDUSTRIAL HYGIENE GENERAL AREA AIR SAMPLE DATA ENTRY SCREEN," the results edit screen will be displayed:

THERE IS ONE STRESSOR FOR SAMPLE NUMBER TT90-0001
Highlight desired record to edit then press ESC

SAMPLNUM	SUBSTANCE	QUALIFIER	RESULT	UNIT
TT90-0070	LEAD		0.0020	MG/M3

view and edit fields

-Step 6-

For multiple stressors, use the up and down cursor to highlight the desired stressor to be edited. When stressor to be edited is highlighted, press "ESC." The next screen will appear:

THERE IS ONE STRESSOR FOR SAMPLE NUMBER TT90-0001
Highlight desired record to edit then press ESC

SAMPLNUM	SUBSTANCE	QUALIFIER	RESULT	UNIT
TT90-0070	LEAD		0.0020	MG/M3

TT90-0001
CAS Number: 7439-92-1
Substance: LEAD
Qualifier: Results: 0.0020 Unit: MG/M3

Delete this Record? N Edit More Records? N

-Step 7-

Press "ENTER" or change the CAS Number if desired and then press"ENTER" to accept. The substance for the CAS Number entered will appear in the "SUBSTANCE" field. Edit SUBSTANCE, Q (Qualifier), RESULTS, and UNIT as required. Press "ENTER" to accept or type over with new/correct information.

-Step 8-

"Delete this Record?" is set to default "N" for no.

If you wish to delete this record, change the default "N" to "Y." If field is changed to "Y", database will need to be "PACKed" (see Step 16).

-Step 9-

"Edit More Records" is set to default "N" for no.

If you wish to edit more stressor(s) collected under this same sample number; change the default "N" to "Y"; press "ENTER" and the results edit screen will be displayed again so further corrections can be made following Steps 6 through 8.

If "ENTER" is pressed with the default "N" set, the SAMPLE NUMBER EDIT screen will be displayed again. Enter another sample number or press "ENTER" to continue.

-Step 10-

If no more sample numbers require editing, press "ENTER" with the default set "N." The ADD STRESSOR screen will be displayed:

Do you want to ADD a stressor to a sample number? N

-Step 11-

Pressing "ENTER" with the default "N" selected in the ADD STRESSOR returns you to the GENERAL AREA SAMPLE MENU.

Changing the "N" to "Y" in the ADD STRESSOR screen will display the SAMPLE NUMBER ADD STRESSOR TO screen:

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO      -
```

-Step 12-

To add an additional stressor to a sample number already entered into the database, enter the sample number < TT90-0070 > to the "ENTER SAMPLE NUMBER ADD STRESSOR TO" screen. The following screen will be displayed:

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO  TT90-0070

        CAS Number:
         Substance:
         Qualifier:
            Result:  0.0000
              Unit:  MG/M3

        Adding more stressors to this sample number?  N
```

-Step 13-

Enter CAS Number of stressor to be added in the shadow box and press "ENTER".

NOTE: Substance fields will be filled in to match the CAS Number.

Enter the other data into the fields as below:

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO  TT90-0070

        CAS Number:  7440-36-0
         Substance:  ANTIMONY
         Qualifier:
           Results:  0.0020
              Unit:  MG/M3

        Adding more stressors to this sample number?  N
```

-Step 14-

If you want to add additional stressors to this sample number, change the "Adding more stressors to this sample number" from "N" to "Y" and press "ENTER," and follow step 13.

If you do not want to add additional stressors to this or other sample numbers, leave "Adding more stressors to this sample number" at the default "N" and press "ENTER". The following screen will be displayed:

-Step 15-

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO  TT90-0070

        CAS Number:  7440-36-0
         Substance:  ANTIMONY
         Qualifier:
           Results:  0.0020
              Unit:  MG/M3

        Adding more stressors to this sample number?  N

        Add stressors to different sample number ? N
```

If you want to add additional stressors to another sample number, change the default "N" to "Y" and press "ENTER." The ADD STRESSOR screen will be displayed again. Follow steps 12 through 14.

If you do not want to add additional stressors to another sample number, leave "add stressors to a different sample number" at the default "N" and press "ENTER." The PRESS ENTER TO CONTINUE OR X TO EXIT screen will be dispalyed.

- Step 16-

If a record was selected for deletion, the database will need to be "PACKed."

NOTE: "PACK" is a dBASE term, meaning records will be

permanently removed from the database.

Refer to the MISCELLANEOUS MENU for instructions on "PACKing."

GENERAL AREA SAMPLE TABLE

This menu selection provides a means to generate a standard table for enclosure into industrial hygiene survey reports. The table provides sampling results for specific Commands/Activities and Shops. Stressor, Location, Worksite, and Task can be used to further separate results. Summaries of results with their applicable exposure standards may be generated with the table or without the table.

-Step 1-

Select GENERAL AREA from the IHIMS MENU. The GENERAL AREA MENU will be displayed as below:

```
                    GENERAL AREA MENU
____________________________________________________________________
BREATHING ZONE   DOSIMETRY   GENERAL AREA   BULK/WIPE   MISC   QUIT
                             GENERAL AREA SAMPLES

                             Enter General Area Samples

                             Edit General Area Samples

                             General Area Sample Table

                             ==> Exit to Main Menu
                             ____________________________

Use the up and down cursor keys to choose an option from this menu
____________________________________________________________________
```

-Step 2-

With the shadow bar on "General Area Sample Table" (as shown above), press "ENTER." The following screen will then be displayed:

GENERAL AREA SAMPLE TABLE INFORMATION

Enter Command:_____ Enter Shop:_____

Enter First Opcode:___-___-__ Enter Second Opcode:___-___-__

Table Number:_____ Table Title:_____

Enter Location:_____ Only this location ? N

Stressor CAS Number:_____ Task:_____

Include Samples after what date? 01/01/80

Current Summary ? N Historical Summary ? N Summaries Only ? N

(field definitions appear here)

Expanded definitions are listed below:

Enter Command - Enter name of command for which table is desired. Command name must be the exact match for data entered into the database, and will appear in the table heading.

Enter Shop - Enter the shop name for which table is desired. Shop name must match exactly the shop name entered into the database, and will appear in the table heading.

Enter First Opcode - Enter "OPCODE" from Appendix A for operation of interest. The first three alpha characters and second three numerical digits are required to generate a table. The last two digits can be used to make the table more specific.

Enter Second Opcode - Enter second "OPCODE" if more than one operations data are to be presented in the table. An example: if lead exposures were to be presented in one table for a paint and prep operation. The "OPCODE" for Painting, Spray, Compressed Air (IND-005-01) would be entered for the First Opcode and the

Second Opcode for Metal Cleaning Mechanical, Sanding (IND-001-11) would be entered. If it did not matter what type of Painting and Metal Cleaning Mechanical procedures were important, the "OPCODEs" could have been entered IND-005 and IND-001 respectively.

Table Number - Enter the table number you want for your report; it will appear at the top of the table.

Table Title - Enter the title you want for your table, it will appear in the table. The table title can be 30 characters long.

Enter Location - Enter location of work center; it will appear in the table.

Only this location - If default "N" is changed to "Y," only those samples where the location matches the location entered for the sample will be printed out.

Stressor CAS_NO - Enter CAS Number, from Appendix B, if only this stressor is to be included in the table.

Task - Enter task if you want the table to only list results that meet the specific task entered.

Include samples after what date - Only samples taken after the date entered will be listed in the table.

Current Summary - If default "N" is changed to "Y", a summary will be generated for the samples taken after the date entered above.

Historical Summary - If default "N" is changed to "Y", a summary will be generated for all samples taken, which meets the criterion entered above.

Summaries only - If the default "N" is changed to "Y," only summaries will be generated. No individual results will be listed.

-Step 3-

Fill in fields with criteria desired to sort out and generate your table. Command, Shop, and First Opcode are mandatory fields and must be entered. Table Number, Table Title, and Location are optional fields and serve to better describe the table being generated. Stressor CAS_NO and Task are used to further limit the range of information that will be provided in the table (making the table more specific). Criteria is entered for this table the same as for the STANDARD AIR SAMPLE TABLE and the table generated can be as variable.

-Step 4-

After "Y" or "N" is selected for "Summaries only ?", the following message will appear on the screen:

Working on the TABLE, It'll take a minute
Turn PRINTER on

-Step 5-

After a minute or so, the following message will appear on the screen:

Be sure printer is ON

Press any key to continue...

-Step 6-

Press any key and the table will print:

TABLE
RESULTS OF GENERAL AREA AIR SAMPLING FOR
(IND-011-13)

SAMPLE NUMBER	SAMPLE DATE	TASK	SOURCE DISTANCE	BOUNDARY	STRESSOR NAME	SAMPLE TIME	RESULT (MG/M3)
TT90-0010	02/22/90	ELEC. SOLDERING	10 FEET	NONE	LEAD	200	0.0200

The table header identifies the Command, Shop and other

information entered in the data entry screen above.

The first line of information in the table provides the sample number, sample date, the work task, distance sample was from the source, stressor, the duration of the sampling, and the sample result.

A single sample number may have been analyzed for several stressors. Each stressor result will be presented separately.

CURRENT SURVEY GENERAL AREA SAMPLE SUMMARY
SAMPLES COLLECTED ON 22 FEBRUARY 90 TO 22 FEBRUARY 90

STRESSOR NAME	NUMBER OF SAMPLES	RESULT RANGE (MG/M3)	PEL 8-HR TWA (MG/M3)	PEL STEL (MG/M3)	PEL CEILING (MG/M3)	TLV 8-HR TWA (MG/M3)	TLV STEL (MG/M3)	TLV CEILING (MG/M3)
LEAD	1	0.0200-0.0200	0.05	-----	-----	0.15	------	------

The "CURRENT" summary provides data information on samples collected after the date entered in the "Include samples after what date" field in the "GENERAL AREA AIR SAMPLE DATA ENTRY screen.

The summary header provides the time frame of the information provided in the table.

The summary includes name of stressor, number of results (samples) taken during the time frame requested, the range of results, and the applicable standards.

HISTORICAL TIME WEIGHTED AVERAGE SUMMARY
SAMPLES COLLECTED ON 28 FEBRUARY 88 TO 22 FEBRUARY 90

STRESSOR NAME	NUMBER OF SAMPLES	RESULT RANGE (MG/M3)	PEL 8-HR TWA (MG/M3)	PEL STEL (MG/M3)	PEL CEILING (MG/M3)	TLV 8-HR TWA (MG/M3)	TLV STEL (MG/M3)	TLV CEILING (MG/M3)
LEAD	5	0.0006-0.0500	0.05	-----	-----	0.15	------	------

The "HISTORICAL" summary provides information on all samples collected to date for the specific Command/Shop entered in the "GENERAL AREA AIR SAMPLE DATA ENTRY screen.

The summary header provides the time frame of the information provided in the table.

The summary includes name of stressor, number of results (samples) taken during the time frame requested, the range of results, and the applicable standards.

Examples of an entry screen and a GENERAL AREA AIR SAMPLE TABLE follow. For additional examples of sorting

capabilities refer to SECTION 1, "Standard Air Sampling Table (Command/Shop)."

When the table is finished you will be asked if you need to do more. The following will be displayed on the screen:

Do some more ? Y

-Step 7-

Press "ENTER" if you desire to do more tables. If not, change the default "Y" to "N" and you will be returned to the GENERAL AREA SAMPLES MENU.

EXAMPLE 1

Command, Shop, and First Opcode, Table Number, Table Title, Location (with the Only this location default "N" unchanged), and Date are entered, and both Current and Historical summaries are selected.

GENERAL AREA SAMPLE TABLE INFORMATION

Enter Command:**NAVCOMMAND**_____ Enter Shop:**ELECTRONIC**__

Enter First Opcode:**IND-011-13** Enter Second Opcode:___-___-__

Table Number:**EX-1**___ Table Title:EXAMPLE ONE_____

Enter Location:**X-336**_____ Only this location ? N

Stressor CAS_NO:_____ Task:_____

Include samples after what date ? 01/01/90

Current Summary ? Y Historical Summary ? Y Summaries only ? N

TABLE EX-1
RESULTS OF GENERAL AREA AIR SAMPLING FOR
(IND-011-13)
NAVCOMMAND
SHOP ELECTRONIC

SAMPLE NUMBER	SAMPLE DATE	TASK	SOURCE DISTANCE	BOUNDARY	STRESSOR NAME	SAMPLE TIME	RESULT (MG/M3)
TT90-0010	02/22/90	ELEC. SOLDERING	10 FEET	NONE	LEAD	200	0.0020
TT90-0070	06/29/90	ELEC. SOLDERING	10 FEET	NONE	LEAD	200	0.0001
TT90-0100	07/24/90	ELEC. SOLDERING	10 FEET	NONE	LEAD	150	0.0300

CURRENT SURVEY GENERAL AREA SAMPLE SUMMARY
SAMPLES COLLECTED ON 22 FEBRUARY 90 TO 24 JULY 90

STRESSOR NAME	NUMBER OF SAMPLES	RESULT RANGE (MG/M3)	PEL 8-HR TWA (MG/M3)	PEL STEL (MG/M3)	PEL CEILING (MG/M3)	TLV 8-HR TWA (MG/M3)	TLV STEL (MG/M3)	TLV CEILING (MG/M3)
LEAD	3	0.0001-0.0300	0.05	-----	-----	0.15	------	------

HISTORICAL TIME WEIGHTED AVERAGE SUMMARY
SAMPLES COLLECTED ON 28 FEBRUARY 88 TO 24 JULY 90

STRESSOR NAME	NUMBER OF SAMPLES	RESULT RANGE (MG/M3)	PEL 8-HR TWA (MG/M3)	PEL STEL (MG/M3)	PEL CEILING (MG/M3)	TLV 8-HR TWA (MG/M3)	TLV STEL (MG/M3)	TLV CEILING (MG/M3)
LEAD	5	0.0001-0.0400	0.05	-----	-----	0.15	------	------

SECTION 4

BULK/WIPE

-Step 1-

Select BULK/WIPE from the IHIMS MENU. The BULK/WIPE MENU will be displayed as below:

BULK/WIPE MENU

```
BREATHING ZONE   DOSIMETRY   GENERAL AREA   BULK/WIPE  MISC  QUIT
                                            BULK/WIPE SAMPLES

                                            Add Bulk Data

                                            Edit Bulk Data

                                            Bulk Sample Table

                                            Add Wipe Data

                                            Edit Wipe Data

                                            Wipe Sample Table

                                            ==> Exit to Main Menu

      Use the up and down cursor keys to choose an option from this menu
```

A brief description of the options from the BULK/WIPE MENU are listed below:

Add Bulk Data - Enter background sampling information. Results may also be entered if received from the laboratory. If results are not available, enter just background and CAS Number(s) for stressor(s). When results are received, use "Edit Bulk Data" to enter results.

For samples analyzed for asbestos, it is better to wait for analysis to be complete before entering data.

Add Bulk Sample data.
Pg. 4-3

Edit Bulk Data	- Used to edit BULK background and results data. Sample numbers are used to access data records. Pg. 4-12 - Used to delete a sample number. Pg. 4-15 - Used to delete a stressor. Pg. 4-15 - Used to add stressor. Pg. 4-16
Bulk Sample Table	- Generates a sample table sorted by Command and Shop for entry into survey report. Pg. 4-19
Add Wipe Data	- Enter background sampling information. Results may also be entered if received from the laboratory. If results are not available, enter just background and CAS Number(s) for stressor(s). When results are received, use "Edit Wipe Data" to enter results. Add Wipe Sample data. Pg. 4-24
Edit Wipe Data	- Used to edit WIPE background and results data. Sample numbers are used to access data records. Pg. 4-32 - Used to delete a sample number. Pg. 4-33 - Used to delete a stressor. Pg. 4-35 - Used to add stressor. Pg. 4-35
Wipe Sample Table	- Generates a sample table sorted by Command and Shop for entry in survey report. Pg. 4-39
==> Exit to Main Menu	- Exit to IHIMS MENU.

BULK SAMPLES
ADD NEW DATA

-Step 1-

Select BULK/WIPE from the IHIMS MENU. The BULK WIPE MENU will be displayed as below:

BULK/WIPE MENU

BREATHING ZONE	DOSIMETRY	GENERAL AREA	**BULK/WIPE** MISC QUIT
			BULK/WIPE SAMPLES
			Add Bulk Data
			Edit Bulk Data
			Bulk Sample Table
			Add Wipe Data
			Edit Wipe Data
			Wipe Sample Table
			==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "Add Bulk Data" as shown above, press "ENTER." The following menu will be displayed on the screen:

```
        INDUSTRIAL HYGIENE BULK SAMPLE DATA ENTRY SCREEN

  Date:07/24/90    Command:____________________  Location:_______
                 Shop/Code:___________________________
    Associated Air Samples:____-____    ____-____

   Site of Sample different from above ?



 Opcode:___-___-__
 Source of Contamination:_______________________________
                 Sampler:___
           Sample Number:____-____
    Material Description:_____________________________________
                    Task:_____________________________________
             Sample Site:_____________________
                Boundary:_
             Sample Type:__
               Date Sent:07/24/90    Date Analyzed:07/24/90
```

Field definitions are at the bottom of the screen. The following are expanded definitions.

Date - Date of sample (MM/DD/YY). The default is the current computer date.

Command - Enter the Command the sample was collected for. The name of the command must always be exactly the same for a specific command. (Example: The Public Works Center [PWC] is doing work at the Naval Supply Center [NSC]; PWC would be entered as the command here and NSC would be entered as the "Site of Sample" command).

Location - Location of shop (work center).

Shop/Code - Enter shop name the sample was collected for. The name of the shop must always be exactly the same for a specific shop. (Example: A Public Works Center [PWC] shop is doing work at a Naval Supply Center [NSC] work center; PWC would be entered as the command here and NSC would be entered as the "Site of Sample" command in the next step).

Associated Air Samples - Sample numbers for air samples taken which are associated with the bulk sample. First and last in series of associated air sample numbers.

Site of Sample different from above? - If "N" is entered, indicating the site of sample is the same as the Command/Shop/Location previously entered, the information will automatically carry into this field.

If "Y" is entered, indicating the site of sample is not the same as previously entered, fields appear which will allow a different Command, Shop and Location to be entered.

Command - Name of command where sample was collected. The name of the command must always be exactly the same for a specific command. (See example of command definition in step above).

Shop - Name of shop where sample was collected. The name of the shop must always be exactly the same for a specific shop. (See example of shop definition in step above).

Location - Location where sample was collected.

Opcode - See appendix A for list of current opcodes.

After entering an "OPCODE", a description of the opcode will appear. If description does not match the operation sampled, check Appendix A and enter the new/correct opcode.

If a nonexistent "OPCODE" is entered, the following message will appear: "NO SUCH NUMBER, TRY AGAIN." Press the space bar to clear and reenter.

If an illegal value is entered, a message will appear at the bottom of the screen.

If no "OPCODE" is entered, "NO OPCODE TO ENTER" will be the description which will appear in the description field.

Source of Contamination - Identify the source of contamination.

Sampler - Initials of individual doing the sampling

(Industrial hygienist; Technician; or other). Should be consistent for any individual.

Sample Number - Sample number is an eight character code divided into several parts. "TT90-0001." The "TT" is an alpha code to identify section/group collecting sample. The "90" is for the year. The "0001" is the number of the sample ranging from 0001 to 9999.

If a given sample number has already been used, a bell will sound and message will appear at bottom of screen. Duplicate sample numbers will not be accepted.

Material Description - Describe the material sampled. (Example: friable pipe insulation; nonfriable floor tile).

Task - Further description of the job being performed, e.g., IND-017-07 [ASBESTOS, AMBIENT SAMPLING] is opcode, task may be pipe insulation, or boiler insulation, etc. Standardization of task within your community may help future sorting.

Sample Site - Specific location where sample was collected.

Boundary - Is sample from (I)nside of a boundary; (O)utside a boundary; or there is (N)o boundary.

Sample Type - Enter type of sample "BK" for Bulk Sample; BB for an invalid sample.

Date Sent - Date sample sent out for analysis.

Date Analyzed - Date lab analyzed (signature date).

-Step 3-

Fill in data fields. Notice that "Date Sent" and "Date Analyzed" will have the current computer date displayed. These dates should be replaced with the actual dates samples are submitted and analyzed. All fields are mandatory except for "Associated Air Samples", "Site of Sample: Command", "Site of Sample: Shop",

"Site of Sample: Location", and "Task". Default values are assigned to "Boundary" and "Sample Type" fields. All fields should be completed when/if the information is available. An example of a filled out data entry screen follows:

INDUSTRIAL HYGIENE BULK SAMPLE DATA ENTRY SCREEN

Date:07/24/90 Command:**PWC**_____ Location:**Z-140**__
Shop/Code:**PIPE SHOP**_____
Associated Air Samples:**TT90-0143** **TT90-0144**

Site of Sample: Command:**NAVCOMMAND**_____
Shop:**WELDING**_____
Location:**X-336**_____

Opcode:**IND-017-07** ASBESTOS,AMBIENT SAMPLING
Source of Contamination:**PIPE INSULATION**_____
Sampler:**JEB**
Sample Number:**TT90-0145**
Material Description:**FRIABLE PIPE INSULATION**_____
Task:**WELDING**_____
Sample Site:**RM. 124 BENCH TOP**_____
Boundary:N_
Sample Type:BK
Date Sent:07/24/90 Date Analyzed:07/24/90

-Step 4-

After all information has been entered, the following screen will be displayed:

INDUSTRIAL HYGIENE BULK RESULTS ENTRY SCREEN
****
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0145

CAS NUMBER	STRESSOR NAME	Q	RESULT	UNIT	OK

Enter the CAS number for the stressor being entered, press enter when finished

NOTE: The following procedure is used if background and results are being entered at the same time (sampling results have been received from the laboratory). If results have not been received and background only is being entered, skip to step 11, "IF RESULTS NOT AVAILABLE WHEN ENTERING BACKGROUND INFORMATION," for the input sequence.

-Step 5-

Enter the CAS number for the stressor sampled into the shadow box area. Stressor CAS numbers are listed in Appendix B.

-Step 6-

When the CAS number is entered and "ENTER" is pressed, the STRESSOR NAME will appear along with blank areas for Q (qualifier - <, >, or blank), RESULT, UNIT, and verifier (OK). Units of measurements are limited to percent (%) and PPM, or may be left blank. Enter qualifier, result and units. If entry is correct, press "ENTER" with the cursor under OK with the default Y for yes. If an error has been made, enter "N" under OK and press "ENTER" to reenter.

Example of filled out screen:

INDUSTRIAL HYGIENE BULK RESULTS ENTRY SCREEN
****
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0145

CAS NUMBER	STRESSOR NAME	Q	RESULT	UNIT	OK
12001-29-5A	ASBESTOS, CHRYSOTILE	<	5.0000	%	Y

-Step 7-

The shadow box will appear for a second CAS number. A second CAS number can now be entered. The input sequence is the same as

above.

The shadow box will appear for a third CAS number (six CAS numbers may be entered). If no more CAS numbers are to be entered press "ENTER" with the cursor in the shadow box to complete entry sequence.

-Step 8-

The next screen (EXIT screen) gives you several options:

PRESS RETURN TO CONTINUE ADDING RECORDS
C, TO CARRY DATA, OR X TO EXIT

Press "ENTER" to get another blank "INDUSTRIAL HYGIENE BULK SAMPLE DATA ENTRY SCREEN." Fill out new form the same as outlined in steps 3 through 7.

The "C" to carry function carries all data fields to the next record except "Associated Air Samples," "Sample Number," and "Sample Type." The top half of the entry screen will be displayed first. Press "ENTER" to accept displayed data, or overtype with new/changed information (this saves many key strokes and time). Continue to step 9 to utilize the carry function.

Pressing "X" will exit back to the BULK/WIPE MENU.

THE CARRY FUNCTION

NOTE: DO NOT USE THE "PgUp" OR "PgDn" KEYS! Record will be lost. It can not be corrected using the IHIMS program.

-Step 9-

The following screen will be displayed if "C" for carry is pressed in step 8 after entering the above example:

INDUSTRIAL HYGIENE BULK SAMPLE DATA ENTRY SCREEN

Date:07/24/90 Command:**PWC**_____ Location:**Z-140**__

```
                Shop/Code:PIPE SHOP_________________
    Associated Air Samples:____-____    ____-____
_____________________________________________________
   Site of Sample: Command:NAVCOMMAND___________
                      Shop:WELDING_________________
                  Location:X-336______
_____________________________________________________
 Opcode:___-___-__
 Source of Contamination:PIPE INSULATION_________________
                Sampler:JEB
           Sample Number:____-____
    Material Description:FRIABLE PIPE INSULATION__________
                    Task:WELDING_______________________________
             Sample Site:RM. 124 BENCH TOP_______
                Boundary:N_
             Sample Type:BK
               Date Sent:07/24/90    Date Analyzed:07/24/90
_____________________________________________________
```

Notice all fields except Associated Air Samples, Sample Number and Sample Type have been carried over from the previous entry sequence. This is the only difference between the original screen and the "C" carry screen. These fields must be entered with different data from the original. All other fields could possibly contain the same data.

-Step 10-

Press "ENTER" to accept displayed data (this saves a lot of key strokes and time), or overtype with new/changed information then press "ENTER." A new Sample Number must be entered for each entry screen.

The results screen will be displayed after the "Date Analyzed" field is filled in or cursor through. Fill in "INDUSTRIAL HYGIENE BULK RESULTS ENTRY SCREEN" as described in steps 4 through 7.

-Step 11-

IF RESULTS NOT AVAILABLE WHEN ENTERING BACKGROUND INFORMATION

After all background information has been entered, the following screen will be displayed:

```
INDUSTRIAL HYGIENE BULK RESULTS ENTRY SCREEN
*******************************************
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-????

CAS NUMBER    STRESSOR NAME                Q  RESULT  UNIT  OK

Enter the CAS number for the stressor being entered, press enter when finished
```

-Step 12-

Enter the CAS number for the stressor sampled into the shadow box area. Stressor CAS numbers are listed in Appendix B.

When the CAS number is entered and "ENTER" is pressed, the STRESSOR NAME will appear along with blank areas for Q (qualifier, <, >, or blank), RESULT, UNIT, and OK (verifier). Press "ENTER" or cursor through the Q, RESULT, UNIT fields to get to the OK field. If the correct stressor name is displayed for the CAS number entered, press "ENTER" to accept the default "Y" for true under the OK field. If the CAS number does not match the STRESSOR NAME, enter "N" for no under OK and press "ENTER" to clear; reenter correct CAS number.

When no more CAS numbers are to be entered, press "ENTER" with the cursor in the shadow box to complete entry sequence.

-Step 13-

The next screen (EXIT screen) gives you the three options, as in step 8, "C" (carry), "ENTER" (new screen), or "X" to exit to the BULK/WIPE MENU.

EDIT BULK SAMPLES

-Step 1-

Select BULK/WIPE from the IHIMS MENU. The BULK/WIPE MENU will be displayed as below:

BULK/WIPE MENU

BREATHING ZONE	DOSIMETRY	GENERAL AREA	**BULK/WIPE** MISC QUIT
			BULK/WIPE SAMPLES
			Add Bulk Data
			Edit Bulk Data
			Bulk Sample Table
			Add Wipe Data
			Edit Wipe Data
			Wipe Sample Table
			==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "Edit Bulk Data" as shown above press "ENTER." The following menu will be displayed on the screen:

BULK SAMPLE EDITING
ENTER SAMPLE NUMBER TO EDIT OR PRESS ENTER TO QUIT

ENTER SAMPLE NUMBER TO EDIT -

-Step 3-

Enter sample number to be edited. Sample Number TT90-0145 will be used in this example.

```
INDUSTRIAL HYGIENE BULK SAMPLE EDITING
ENTER SAMPLE NUMBER TO EDIT OR PRESS ENTER TO QUIT

ENTER SAMPLE NUMBER TO EDIT TT90-0145
```

The first screen to be displayed will be the background data entry screen.

Example of a filled out data entry screen:

```
BULK SAMPLE DATA EDIT SCREEN

Date:07/24/90    Command:PWC_________________  Location:Z-140__
                Shop/Code:PIPE SHOP_________________
    Associated Air Samples:TT90-0143   TT90-0144

   Site of Sample: Command:NAVCOMMAND___________
                      Shop:WELDING_________________
                  Location:X-336______

 Opcode:IND-017-07  ASBESTOS,AMBIENT SAMPLING
 Source of Contamination:PIPE INSULATION_________________
                 Sampler:JEB
           Sample Number:TT90-0145
    Material Description:FRIABLE PIPE INSULATION__________
                    Task:WELDING_______________________________
             Sample Site:RM. 124 BENCH TOP_______
                Boundary:N
             Sample Type:BK
               Date Sent:07/24/90    Date Analyzed:07/24/90

     DELETE all information for this sample number ? N
```

-Step 4-

Data are accepted by pressing "ENTER" or using the up/down and the right/left cursor keys to pass through the data fields.

NOTE: ALL INFORMATION FOR THIS SAMPLE NUMBER MAY BE DELETED BY CHANGING THE DEFAULT "N" TO "Y." The database record will be marked for deletion; the information for this sample number will not be used to generate tables. The database will need to be "PACKed" (See step 17).

-Step 5-

After pressing "ENTER" or cursoring past the Delete Information in the "BULK SAMPLE DATA EDIT SCREEN," the results edit screen will be displayed:

THERE IS ONE STRESSOR FOR SAMPLE NUMBER TT90-0145

Highlight desired record to edit then press ESC

SAMPLNUM	SUBSTANCE	QUALIFIER	RESULT	UNIT
TT90-0145	ASBESTOS, CHRYSOTILE		5.0000	%

view and edit fields

-Step 6-

For multiple stressors, use the up and down cursor to highlight the desired stressor to be edited. When stressor to be edited is highlighted, press "ESC." The next screen will appear.

```
THERE IS 1 STRESSOR FOR SAMPLE NUMBER TT90-0145
Highlight desired record to edit then press ESC
SAMPLNUM  SUBSTANCE                          QUALIFIER  RESULT  UNIT
TT90-0145 ASBESTOS, CHRYSOTILE                          5.0000    %

    TT90-0145
    CAS Number:  12001-29-5A
     Substance:
     Qualifier:    Results:    5.0000   Unit:    %

   Delete this Stressor? N    Edit More Stressor? N
```

-Step 7-

Press "ENTER" or change the CAS Number if desired and then press "ENTER" to accept. The substance represented by the CAS Number will then be displayed. Press "ENTER" to accept remaining field values or edit.

-Step 8-

"Delete this Stressor?" is set to default "N" for no.

If you wish to delete this record, change the default "N" to "Y." If field is changed to "Y", database will need to be "PACKed" (See step 17).

-Step 9-

"Edit More Stressor" is set to default "N" for no.

If you wish to edit more stressor(s) collected under this same sample number, change the default "N" to "Y." Press "ENTER" and the screen will be displayed again so further corrections can be made following steps 6 through 9.

If "ENTER" is pressed with the default "N" set; the BULK SAMPLE EDIT screen will be displayed. Enter another sample number or press "ENTER" to continue.

-Step 10-

If no more stressor(s) for this sample number require editing, press "ENTER" with the default set "N." The ADD STRESSOR screen will be displayed:

```
Do you want to ADD a stressor to a sample number? N
```

-Step 11-

Pressing "ENTER" with the default "N" selected in the ADD A STRESSOR screen displays the PRESS ENTER TO CONTINUE OR X TO EXIT screen.

Changing the "N" to "Y" in the ADD STRESSOR screen will display the SAMPLE NUMBER ADD STRESSOR TO screen:

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO      -
```

-Step 12-

To add an additional stressor to a sample number already entered into the database, enter the sample number < TT90-0145 > to the "ENTER SAMPLE NUMBER ADD STRESSOR TO" screen. The following screen will be displayed:

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO  TT90-0145
```

```
CAS Number:
 Substance:
 Qualifier:
   Results:  0.0000
      Unit:  %

Adding more stressors to this sample number ?  N
```

-Step 13-

Enter CAS Number of stressor to be added in the shadow box and press "ENTER." The substance represented by the CAS Number will be displayed as in the following:

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO  TT90-0145

        CAS Number:  12172-73-5
         Substance:  ASBESTOS, AMOSITE
         Qualifier:
           Results:  0.0000
              Unit:  __

       Adding more stressors to this sample number ?  N
```

-Step 14-

Enter data into fields. An example is displayed below:

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO  TT90-0145

        CAS Number:  12001-29-5A
         Substance:  ASBESTOS, CHRYSOTILE
         Qualifier:
           Results:  5.0000
              Unit:  %

       Adding more stressors to this sample number ?  N
```

-Step 15-

If you want to add additional stressors to this sample number, change the "Adding more stressors to this sample number" from "N" to "Y" and press "ENTER," follow steps 12 through 14.

If you do not want to add additional stressors to this sample number, leave "Adding More stressors to this Sample Number" at the default "N" and press "ENTER," and the following screen will be displayed:

-Step 16-

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO  TT90-0145

        CAS Number:  12001-29-5A
         Substance:  ASBESTOS, CHRYSOTILE
         Qualifier:
           Results:  5.0000
              Unit:  %

       Adding more stressors to this sample number ?  N
       Add stressor to a different sample number ? N
```

If you want to add additional stressors to another sample number, change the default "N" to "Y" and press "ENTER." The ADD STRESSOR screen will be displayed again. Repeat process following Steps 12 through 15.

If you do not want to add additional stressors to another sample number, leave "Add stressors to a different sample number" at the default "N" and press "ENTER." The PRESS ENTER TO CONTINUE OR X TO EXIT screen will be displayed.

-Step 17-

If a record was selected for deletion, the database will need to be "PACKed."

NOTE: "PACK" is a dBASE term, meaning records will be permanently removed from the database.

Refer to the MISCELLANEOUS MENU for instructions on "PACKing."

BULK SAMPLE TABLE

This menu selection provides a means to generate a standard table for enclosure into industrial hygiene survey reports. The table provides sampling results for specific sample sites or Command and Shop combinations. Stressor and Location can be used to further separate results.

-Step 1-

Select BULK/WIPE from the IHIMS MENU. The BULK/WIPE MENU will be displayed as below:

BULK/WIPE MENU

BREATHING ZONE DOSIMETRY GENERAL AREA **BULK/WIPE** MISC QUIT

BULK/WIPE SAMPLES

Add Bulk Data

Edit Bulk Data

Bulk Sample Table

Add Wipe Data

Edit Wipe Data

Wipe Sample Table

==>Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu.

-Step 2-

With the shadow bar on "Bulk Sample Table" (as shown above), press "ENTER." The following screen will then be displayed:

```
     +))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))),
     *                   TABLE TYPE SELECTION                     *
     /))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))1
     *      Press S for Table based on Sample Site or             *
     *      press R for Table based on samples relating           *
     *      to a given command and shop combination S             *
     .))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))-
```

This screen gives the option of generating a Table based on the Sample Site (S) or a Command/Shop combination (R).

-Step 3a-

The following screen will be displayed if the default setting (S) is selected by pressing :ENTER":

```
                +))))))))))))))))))))))))))))))))))))))))))),
                *SAMPLE SITE BULK SAMPLE TABLE INFORMATION   *
+))))))))))))))2))))))))))))))))))))))))))))))))))))))))))))))2)),
*                                                              *
* ENTER COMMAND                        ENTER SHOP              *
*                                                              *
* ENTER LOCATION                       ONLY THIS LOCATION ? N  *
*                                                              *
* TABLE NUMBER                                                 *
*                                                              *
* ASBESTOS ONLY ? N                                            *
*                                                              *
* STRESSOR CAS NO                                              *
*                                                              *
*     INCLUDE SAMPLES AFTER WHAT DATE?  01/01/80               *
*                                                              *
*                                                              *
*                                                              *
.))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))-
                     (Field definitions appear here)
```

-Step 3b-

The following screen will be displayed if the default setting (R) is selected by pressing "ENTER":

```
                 +))))))))))))))))))))))))))))))))))))))))),
                 *BULK SAMPLES FOR A GIVEN SHOP INFORMATION   *
+))))))))))))))2))))))))))))))))))))))))))))))))))))))))))))))2),
* ENTER COMMAND                    ENTER SHOP                  *
*                                                              *
* ENTER LOCATION                   ONLY THIS LOCATION ? N      *
*                                                              *
* TABLE NUMBER          TABLE TITLE                            *
*                                                              *
```

```
* ASBESTOS ONLY ? N                                                  *
*                                                                    *
* STRESSOR CAS NO                                                    *
*                                                                    *
*     INCLUDE SAMPLES AFTER WHAT DATE?  01/01/80                     *
*                                                                    *
.))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))-
                    (Field definitions appear here)
```

Expanded definitions are listed below:

Enter Command - Enter name of command for which table is desired. Command name must be the exact match for data entered into the database, and will appear in the table heading.

Enter Shop - Enter the shop name for which table is desired. Shop is like command and must match exactly the shop name entered into the database, and will appear in the table heading.

Enter Location - Enter location of work center.

Only this location - If default "N" is changed to "Y," only those samples where the location matches the location entered for the sample will be printed out.

Table Number - Enter the table number you want for your report, it will appear at the top of the table.

Table Title - Enter the title you want for your Command/Shop combination table, it will appear in the table. The table title can be 30 characters long.

Asbestos Only - If default "N" is changed to "Y," only samples analyzed for asbestos will be printed. If default "N" is not changed, all other sample results will appear in table.

Stressor CAS NO - Enter CAS Number, from Appendix B, if only this stressor is to be included in the table.

Include samples after what date - Only samples taken after the date entered will be listed in the table.

-Step 4-

Fill in fields with criteria desired to sort out and generate your table. Command and Shop are mandatory fields and must be entered. Location, Table Number and Table Title are optional fields and serve to better describe the table being generated.

-Step 5-

After date is selected for "Include Samples After what Date?" the following message will appear on the screen:

```
S)))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
    Working on the TABLE, it'll take a minute
                  Turn PRINTER on

S)))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))Q
```

-Step 6-

After a minute or so the following message will appear on the screen:

```
                                S)))))))))))))))))))))))))
                                  Be sure printer is ON
                                S)))))))))))))))))))))))))
```

Press any key to continue...

-Step 7-

Press any key and the table will print. Two types of tables may be generated depending on whether the table is for asbestos identification or for a substance whose result may be reported as a concentration.

Example 1: Asbestos Bulk Analysis

TABLE 1
RESULTS OF BULK SAMPLES COLLECTED AT
NAVCOMMAND
ADMIN

SAMPLE # / DATE	COMMAND / SHOP	LOCATION	MATERIAL SOURCE / MATERIAL DESCRIPTION	SAMPLE SITE / SUBSTANCE
TT91-0444	NAVCOMMAND	Bldg 1	DEBRIS ON DESK	DESK TOP
07/11/91	ADMIN		WHITE FIBROUS	ASBESTOS CHRYSOTILE
TT91-0446	NAVCOMMAND	Bldg 1	DEBRIS ON FLOOR	FLOOR
8/14/91		ADMIN	WHITE FIBROUS	ASBESTOS CHRYSOTILE

The table header identifies the Command, shop and other information entered in the data entry screen above.
The first line of information in the table provides the sample number, Command, location, material source and sample site.

The second line of information in the table provides the sample date, shop, material description and bulk analysis result.

Example 2: Analysis of Bulk Paint Chips

TABLE 1
RESULTS OF BULK SAMPLES COLLECTED AT
NAVCOMMAND
FMD

SAMPLE # / DATE	LOCATION	MATERIAL SOURCE / MATERIAL DESCRIPTION	SAMPLE SITE / SUBSTANCE	RESULT/UNIT
TT90-1000	EQUIP ROOM	SCRAPING OLD PAINT	EQUIPMENT ROOM	<1.0000%
11/16/90		RED PAINT CHIPS	LEAD	

The table header identifies the Command, shop and other information entered into the data entry screen.

The first line of information in the table provides the sample number, location, material source, sample site and result/unit.

The second line of information provides the date, material description and substance.

-Step 8-

After the table has printed, the following screen will then be displayed:

```
S))))))))))))))))))))))))))))))
    Do some more?  Y
S))))))))))))))))))))))))))))))
```

Press "ENTER" if you desire to do more tables. If not, change the default "Y" to "N" and you will be returned to the BULK/WIPE SAMPLES MENU.

WIPE SAMPLES
ADD NEW DATA

-Step 1-

Select BULK/WIPE from the IHIMS MENU. The BULK WIPE MENU will be displayed as below:

BULK/WIPE MENU

```
BREATHING ZONE   DOSIMETRY   GENERAL AREA   BULK/WIPE  MISC  QUIT
                                            BULK/WIPE SAMPLES

                                            Add Bulk Data

                                            Edit Bulk Data

                                            Bulk Sample Table

                                            Add Wipe Data

                                            Edit Wipe Data

                                            Wipe Sample Table

                                            ==> Exit to Main Menu

       Use the up and down cursor keys to choose an option from this menu
```

-Step 2-

With the shadow bar on "Add Wipe Data" as shown above, press "ENTER." The following menu will be displayed on the screen:

```
INDUSTRIAL HYGIENE WIPE SAMPLE DATA ENTRY SCREEN

 Date:07/24/90    Command:____________________  Location:_______
                Shop/Code:___________________________
   Associated Air Samples:____-____    ____-____

Opcode:___-___-__
  Source of Contamination:_______________________________
                 Sampler:___
           Sample Number:____-____
                    Task:_____________________________________
             Sample Site:_______________________
                Boundary:__
             Sample Type:__
               Date Sent:07/24/90    Date Analyzed:07/24/90
```

Field definitions are at the bottom of the screen. The following are expanded definitions:

Date - Date of sample (MM/DD/YY). The default is the current computer date.

Command - Enter the Command where the sample was collected. The name of the command must always be exactly the same for a specific command.

Location - Location of shop (work center).

Shop/Code - Enter shop name where sample was collected. The name of the shop must always be exactly the same for a specific shop.

Associated Air Samples - Sample numbers for air samples taken which are associated with the bulk sample. First and last in series of associated air sample numbers.

Opcode - See appendix A for list of opcodes.

After entering an "OPCODE", a description of the opcode will appear. If description does not match the operation sampled, check Appendix A and enter the new/correct opcode.

If a nonexistent "OPCODE" is entered, the

following message will appear: "NO SUCH NUMBER, TRY AGAIN". Press the space bar to clear and reenter.

If an illegal value is entered, a message will appear at the bottom of the screen. If no "OPCODE" is entered, "NO OPCODE TO ENTER" will be the description which will appear in the description field.

Source of Contamination - Identify the source of contamination.

Sampler - Initials of individual doing the sampling (Industrial hygienist; Technician ; or other). Should be consistent for any individual.

Sample Number - Sample number is an eight character code divided into several parts. "TT90-0001." The "TT" is an alpha code to identify section/group collecting sample. The "90" is for the year. The "0001" is the number of the sample ranging from 0001 to 9999.

If a given sample number has already been used, a bell will sound and a message will appear at bottom of screen. Duplicate sample numbers will not be accepted.

Task - Further description of the job being performed (e.g. IND-001-11 [METAL CLEANING MECHANICAL, SANDING] is opcode; task may be on painted metal, confined space, or in barge. Standardization of task within your community may help future sorting.

Sample Site - Specific location where sample was collected.

Boundary - Is sample from (I)nside of a boundary; (O)utside a boundary; or there is (N)o boundary.

Sample Type - Enter type of sample "WP" for Wipe Sample; WX for an invalid sample.

Date Sent - Date sample sent out for analysis.

Date - Date lab analyzed (signature date).

Analyzed

-Step 3-

Fill in data fields. Notice that "Date Sent" and "Date Analyzed" will have the current computer date displayed. These dates should be replaced with the actual dates samples are submitted and analyzed. All fields are mandatory except for "Associated Air Samples" and "Task." Default values are assigned to "Boundary" and "Sample Type" fields. All fields should be completed when/if the information is available.

Example of a filled out data entry screen:

```
INDUSTRIAL HYGIENE WIPE SAMPLE DATA ENTRY SCREEN

  Date:07/24/90    Command:NAVCOMMAND__________  Location:X-22___
                 Shop/Code:PAINT_________________
    Associated Air Samples:TT90-0209    TT90-0210

 Opcode:IND-001-11 METAL CLEANING MECHANICAL, SANDING
   Source of Contamination:SANDING DUST_________________
                   Sampler:JEB
             Sample Number:TT90-0211
                      Task:PAINT PREP___________________________
               Sample Site:WORK BENCH___________
                  Boundary:N_
               Sample Type:WP
                 Date Sent:07/24/90    Date Analyzed:07/24/90
```

-Step 4-

After all information has been entered, the following screen will be displayed:

```
INDUSTRIAL HYGIENE WIPE RESULTS ENTRY SCREEN
*****************************************
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0211

CAS NUMBER    STRESSOR NAME                Q  RESULT  UNIT  OK

Enter the CAS number for the stressor being entered, press enter when finished
```

NOTE: The following procedure is used if background and results are being entered at the same time (sampling results have been received from the laboratory). If results have not been received and background only is being entered, skip to page 4-32 step 11, "IF RESULTS NOT AVAILABLE WHEN ENTERING BACKGROUND INFORMATION," for input sequence.

-Step 5-

Enter the CAS number for the stressor sampled into the shadow box area. Stressor CAS numbers are listed in Appendix B.

-Step 6-

When the CAS number is entered and "ENTER" is pressed, the STRESSOR NAME will appear along with blank areas for Q (qualifier - <, >, or blank), RESULT, UNIT, and verifier (OK). UNIT will default to MG/M2 (all units are maintained as MG/M2 or UG/M2). Enter qualifier, result and units. If entry is correct, press "ENTER" with the cursor under OK with the default Y for yes. If an error has been made enter "N" under OK and press "ENTER" to reenter.

Example of filled out screen:

INDUSTRIAL HYGIENE WIPE RESULTS ENTRY SCREEN
****
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-0211

CAS NUMBER	STRESSOR NAME	Q	RESULT	UNIT	OK
7439-92-1	LEAD	<	45.0000	MG/M2	Y

-Step 7-

The shadow box will appear for a second CAS number. A second CAS number can now be entered. The input sequence is the same as above.

The shadow box will appear for a third CAS number (six CAS numbers may be entered). If no more CAS numbers are to be entered, press "ENTER" with the cursor in the shadow box to

complete entry sequence.

-Step 8-

The next screen (EXIT screen) gives you several options:

PRESS RETURN TO CONTINUE ADDING RECORDS
C, TO CARRY DATA, OR X TO EXIT

Press "ENTER" to get another blank "INDUSTRIAL HYGIENE WIPE SAMPLE DATA ENTRY SCREEN." Fill out new form the same as outlined in steps 3 through 8.

The "C" to carry function carries all data fields to the next record except "Associated Air Samples" and Sample Number." Press "ENTER" to accept displayed data, or overtype with new/changed information (this saves many key strokes and time). Continue to step 9 to utilize the carry function.

Pressing "X" will exit back to the BULK/WIPE MENU.

-Step 9-

THE CARRY FUNCTION

NOTE: DO NOT USE THE "PgUp" OR "PgDn" KEYS! Record will be lost. It can not be corrected using the IHIMS program.

The following screen will be displayed if "C" for carry is pressed in step 8 after entering the above example:

INDUSTRIAL HYGIENE WIPE SAMPLE DATA ENTRY SCREEN

Date:07/24/90 Command:**NAVCOMMAND**_____ Location:**X-22**___
Shop/Code:**PAINT**_____
Associated Air Samples:____-____ ____-____

Opcode:**IND-001-11**
Source of Contamination:**SANDING DUST**_____
Sampler:**JEB**
Sample Number:____-____
Task:**PAINT PREP**_____
Sample Site:**WORK BENCH**_____
Boundary:N_
Sample Type:WP
Date Sent:07/24/90 Date Analyzed:07/24/90

Notice all fields except Associated Air Samples and Sample Number have been carried over from the previous entry sequence. This is the only difference between the original screen and the "C" carry screen. These fields must be entered with different data from the original. All other fields could possibly contain the same data.

-Step 10-

Press "ENTER" to accept displayed data (this saves a lot of key strokes and time), or overtype with new/changed information, then press "ENTER." A new Sample Number must be entered for each entry screen.

The results screen will be displayed after the "Date Analyzed" field is filled in or cursor through. Fill in "INDUSTRIAL HYGIENE WIPE RESULTS ENTRY SCREEN" as described in steps 4 through 8.

-Step 11-

IF RESULTS NOT AVAILABLE WHEN ENTERING BACKGROUND INFORMATION

After all background information has been entered, the following screen will be displayed.

```
INDUSTRIAL HYGIENE WIPE RESULTS ENTRY SCREEN
*******************************************
ENTER CAS NUMBER(S) FOR SAMPLE NUMBER TT90-????

CAS NUMBER    STRESSOR NAME                Q  RESULT  UNIT  OK

Enter the CAS number for the stressor being entered, press enter when finished
```

-Step 12-

Enter the CAS number for the stressor sampled into the shadow box area. Stressor CAS numbers are listed in Appendix B.

When the CAS number is entered and "ENTER" is pressed, the STRESSOR NAME will appear along with blank areas for Q (qualifier - <, >, or blank), RESULT, UNIT, and OK (verifier). Press "ENTER" or cursor through the Q, RESULT, UNIT fields to get to the OK field. If the correct stressor name is displayed for the CAS number entered press "ENTER" to accept the default "Y" for true under the OK field. If the CAS number does not match the STRESSOR NAME enter "N" for no under OK and press "ENTER" to clear; reenter correct CAS number.

When no more CAS numbers are to be entered press "ENTER" with the cursor in the shadow box to complete entry sequence.

-Step 13-

The next screen (EXIT screen) gives you the three options, as in step 8, "C" (carry), "ENTER" (new screen), or "X" to exit to the BULK/WIPE MENU.

EDIT WIPE SAMPLES

-Step 1-

Select BULK/WIPE from the IHIMS MENU. The BULK WIPE MENU will be displayed as below:

BULK/WIPE MENU

BREATHING ZONE DOSIMETRY GENERAL AREA **BULK/WIPE** MISC QUIT

BULK/WIPE SAMPLES

Add Bulk Data

Edit Bulk Data

Bulk Sample Table

Add Wipe Data

Edit Wipe Data

Wipe Sample Table

==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "Edit Wipe Data" as shown above, press "ENTER." The following menu will be displayed on the screen:

WIPE SAMPLE EDITING

ENTER SAMPLE NUMBER TO EDIT OR PRESS ENTER TO QUIT

ENTER SAMPLE NUMBER TO EDIT -

-Step 3-

Enter sample number to be edited. Sample Number TT90-0211 will be used in this example.

```
WIPE SAMPLE EDITING
ENTER SAMPLE NUMBER TO EDIT OR PRESS ENTER TO QUIT

ENTER SAMPLE NUMBER TO EDIT TT90-0211
```

The first screen to be displayed will be the background data entry screen:

Example of a filled out data entry screen.

```
WIPE SAMPLE DATA EDIT SCREEN

Date:07/24/90    Command:NAVCOMMAND__________  Location:X-22___
                Shop/Code:PAINT_____________________
    Associated Air Samples:TT90-0209    TT90-0210

Opcode:IND-001-11 METAL CLEANING MECHANICAL, SANDING
  Source of Contamination:SANDING DUST_________________
                 Sampler:JEB
            Sample Number:TT90-0211
                     Task:PAINT PREP____________________________
              Sample Site:WORK BENCH____________
                 Boundary:N_
              Sample Type:WP
                Date Sent:07/24/90    Date Analyzed:07/24/90

      DELETE all information for this sample number ? N
```

-Step 4-

Data are accepted by pressing "ENTER" or using the up/down and the right/left cursor keys to pass through the data fields.

NOTE: ALL INFORMATION FOR THIS SAMPLE NUMBER MAY BE DELETED BY CHANGING THE DEFAULT "N" TO "Y." The database record will be marked for deletion; the information for this sample number will

not be used to generate tables. The database will need to be "PACKed" (See step 17).

-Step 5-

After pressing "ENTER" or cursoring past the Date Analyzed field in the "WIPE SAMPLE DATA EDIT SCREEN" the results edit screen will be displayed:

THERE IS ONE STRESSORS FOR SAMPLE NUMBER TT90-0211
Highlight desired record to edit then press ESC

SAMPLNUM	SUBSTANCE	QUALIFIER	RESULT	UNIT
TT90-0211	LEAD		45.0000	UG/M2

view and edit fields

-Step 6-

For multiple stressors, use the up and down cursor to highlight the desired stressor to be edited. When stressor to be edited is highlighted, press "ESC." The next screen will appear:

THERE IS ONE STRESSORS FOR SAMPLE NUMBER TT90-0211
Highlight desired record to edit then press ESC

SAMPLNUM	SUBSTANCE	QUALIFIER	RESULT	UNIT
TT90-0211	LEAD		45.0000	UG/M2

TT90-0211
CAS Number: 7439-92-1
Substance:
Qualifier: Results: 45.0000 Unit: MG/M2

Delete this Stressor? N Edit More Stressor? N

-Step 7-

Press "ENTER" or change the CAS Number if desired and then press "ENTER" to accept. The substance represented by the CAS Number will then be displayed. Press "ENTER" to accept remaining field values or edit.

-Step 8-

"Delete this Stressor?" is set to default "N" for no.

If you wish to delete this record, change the default "N" to "Y." If field is changed to "Y", database will need to be "PACKed" (see Step 17).

-Step 9-

"Edit More Stressors" is set to default "N" for no.

If you wish to edit more stressors collected under this same sample number, change the default "N" to "Y." Press "ENTER" and the screen will be displayed again so further corrections can be made following steps 6 through 9.

If "ENTER" is pressed with the default "N" set; the WIPE SAMPLE EDITING screen will be displayed. Enter another sample number or press "ENTER" to continue.

-Step 10-

If no more sample numbers require editing, press "ENTER." The ADD STRESSOR screen will be displayed:

Do you want to ADD a stressor to a sample number? N

-Step 11-

Pressing "ENTER" with the default "N" selected in the ADD A STRESSOR screen displays the PRESS ENTER TO CONTINUE OR X TO EXIT screen.

Changing the "N" to "Y" in the ADD STRESSOR screen will display the SAMPLE NUMBER ADD STRESSOR TO screen:

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO      -
```

-Step 12-

To add an additional stressor to a sample number already entered into the database, enter the sample number < TT90-0211 > to the "ENTER SAMPLE NUMBER ADD STRESSOR TO" screen. The following screen will be displayed:

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO  TT90-0211
```

```
CAS Number:
 Substance:
 Qualifier:
   Results:  0.0000
      Unit:  MG/M2

Adding more stressors to this sample number ?  N
```

-Step 13-

Enter CAS Number of stressor to be added in the shadow box and press "ENTER." The substance represented by the CAS Number will be displayed as in the following:

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO  TT90-0211
```

```
CAS Number:  7440-36-0
 Substance:  ANTIMONY
 Qualifier:
```

```
Results:  0.0000
   Unit:  MG/M2

Adding more stressors to this sample number ?  N
```

-Step 14-

Enter data into fields. An example is displayed below:

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO  TT90-0211
```

```
CAS Number:  7440-36-0
 Substance:  ANTIMONY
 Qualifier:
   Results:  1.0000
      Unit:  MG/M2

Adding more stressors to this sample number ?  N
```

-Step 15-

If you want to add additional stressors to this sample number, change the "Adding more stressors to this sample number" from "N" to "Y" and press "ENTER," follow steps 12 through 14.

If you do <u>not</u> want to add additional stressors to <u>this</u> sample number, leave "Adding More stressors to this Sample Number" at the default "N" and press "ENTER"; the following screen will be displayed:

-Step 16-

```
ENTER SAMPLE NUMBER TO ADD STRESSOR TO  TT90-0211
```

```
CAS Number:  7440-36-0
 Substance:  ANTIMONY
 Qualifier:
   Results:  1.0000
      Unit:  MG/M2

Adding more stressors to this sample number ?  N
Add stressors to a different sample number ? N
```

If you want to add additional stressors to another sample number, change the default "N" to "Y" and press "ENTER." The ADD STRESSOR screen will be displayed again. Repeat process following steps 12 through 15.

If you do <u>not</u> want to add additional stressors to another sample number, leave "Add stressor to a different sample number" at the default "N" and press "ENTER." The PRESS ENTER TO CONTINUE OR X TO EXIT screen will be displayed.

-Step 17-

If a record was selected for deletion, the database will need to be "PACKed."

NOTE: "PACK" is a dBASE term, meaning records will be permanently removed from the database.

Refer to the MISCELLANEOUS MENU for instructions on "PACKing."

WIPE SAMPLE TABLE

This menu selection provides a means to generate a standard table for enclosure into industrial hygiene survey reports. The table provides sampling results for Command, Shop and Opcode combinations. Stressor and Location can be used to further separate results.

-Step 1-

Select BULK from the IHIMS MENU. The BULK/WIPE MENU will be displayed as below:

BULK/WIPE MENU

BREATHING ZONE DOSIMETRY GENERAL AREA **BULK/WIPE** MISC QUIT

BULK/WIPE SAMPLES

Add Bulk Data

Edit Bulk Data

Bulk Sample Table

Add Wipe Data

Edit Wipe Data

Wipe Sample Table

==>Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu.

-Step 2-

With the shadow bar on "Wipe Sample Table" (as shown above), press "ENTER." The following screen will then be displayed:

```
                +))))))))))))))))))))))))))))))))))))))))))),
                * WIPE SITE BULK SAMPLE TABLE INFORMATION    *
+))))))))))))))2))))))))))))))))))))))))))))))))))))))))))2)),
*                                                                *
* ENTER COMMAND                       ENTER SHOP                *
*                                                                *
* ENTER FIRST OPCODE  - - -                                     *
*                                                                *
* TABLE NUMBER           TABLE TITLE                            *
*                                                                *
* ENTER LOCATION                      ONLY THIS LOCATION ? N    *
*                                                                *
* STRESSOR CAS_NO                     TASK                      *
*                                                                *
*     INCLUDE SAMPLES AFTER WHAT DATE?  01/01/80                *
*                                                                *
*                                                                *
*                                                                *
.))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))-
                  (Field definitions appear here)
```

Expanded definitions are listed below:

Enter Command - Enter name of command for which table is desired. Command name must be the exact match for data entered into the database, and will appear in the table heading.

Enter Shop - Enter the shop name for which table is desired. Shop is like command and must match exactly the shop name entered into the database, and will appear in the table

Enter First OPCode - Enter "OPCODE" from Appendix A for operation of interest. The first three alpha characters and second three numerical digits are required to generate a table. The last two digits can be used to make the table more specific.

Table Number - Enter the table number you want for your report; it will appear at the top of the table.

Table Title - Enter the title you want for your table; it will appear in the table. The table title can be 30 characters long.

Enter Location	-	Enter location of work center; it will appear in the table.
Only this location	-	If default "N" is changed to "Y," only those samples where the location matches the location entered for the sample will be printed out.
Stressor CAS NO	-	Enter CAS Number, from Appendix B, if only this stressor is to be included in the table.
Task	-	Enter task if you want the table to only list results that meet the specific task entered.
Include samples after what date	-	Only samples taken after the date entered will be listed in the table.

-Step 3-

Fill in fields with criteria desired to sort out and generate your table. Command, Shop and OPCode are mandatory fields and must be entered. Location, Table Number and Table Title are optional fields and serve to better describe the table being generated.

-Step 4-

After date is selected for "Include Samples After what Date?" the following message will appear on the screen.

```
S))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
    Working on the TABLE, it'll take a minute
                  Turn PRINTER on

S))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))Q
```

-Step 5-

After a minute or so the following message will appear on the screen.

```
                                S))))))))))))))))))))))))
```

```
                                  Be sure printer is ON
                                S))))))))))))))))))))))))
```

Press any key to continue...

-Step 6-

Press any key and the table will print.

TABLE 1
RESULTS OF WIPE SAMPLES FOR
PCB CLEANUP
HAZ WASTE
BLDG 1

SAMPLE DATE/ SAMPLE NUMBER	LOCATION/ TASK	SOURCE OF MATERIAL/ SITE OF SAMPLE	STRESSOR	RESULT (MG/M2)
07/03/90	BLDG 1	TRANSFORMER	CHLORODIPHENYL (54% CHLORINE)	< 0.0850
TT90-0604	PCB LEAK CLEANUP	WALL NEXT TO DOOR ENTRANCE		
07/03/90	BLDG 1	TRANSFORMER	CHLORODIPHENYL (54% CHLORINE)	0.4906
TT90-0605	PCB LEAK CLEANUP	FLOOR NEXT TO TRANSFORMER		
07/03/90	BLDG 1	TRANSFORMER	CHLORODIPHENYL (54% CHLORINE)	< 0.0850
TT90-0606	PCB LEAK CLEANUP	ON WALL		

The table header identifies the Command, shop and other information entered in the data entry screen above.

The first line of information in the table provides the sample date, location, material source, stressor and result.

The second line of information in the table provides the sample number, task, site of sample and units of the reported result.

-Step 7-

After the table has printed, you will be returned to the BULK/WIPE SAMPLES MENU.

SECTION 5

MISCELLANEOUS

-Step 1-

Select MISC from the IHIMS MENU. The MISCELLANEOUS MENU will be displayed as below:

MISCELLANEOUS MENU

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE **MISC** QUIT

MISCELLANEOUS

Transfer

Notification Letters

Pack Databases

Quality Assurance

Back up data

List Commands

List Command and Shop

==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

A brief description of the options from the MISCELLANEOUS MENU are listed below:

Transfer - Transfers data entered on a floppy disk using the SATELLITE entry program. The Satellite entry programs allow for data entry on a computer other than the computer with your IHIMS databases.
Page 5-3

Notification Letters	- Program used to print enclosures with sample results for inclusion with a required notification letter. Also generates a draft of the notification letter and stores it in a WP51 file. Page 5-3
Pack Databases	- Dbase term, meaning to remove records which have been marked for deletion in a database file. Page 5-3
Quality Assurance	- Several programs to validate data entered and ensure no data are missing or incomplete. Page 5-10
Back up data	- Program used to back up your database onto hard drive and floppy disks. Page 5-22
List Commands	- List all commands entered into the data base. Used to ensure no one command is entered two different ways. Page 5-24
List Command and Shop	- Used to list shops for each command to ensure no shop is entered two different ways. Page 5-26
==> Exit to Main Menu	- Exit to IHIMS MENU.

TRANSFER

-Step 1-

Select MISC from the IHIMS MENU. The MISCELLANEOUS MENU will be displayed as below:

```
                          MISCELLANEOUS MENU
═══════════════════════════════════════════════════════════════════════
BREATHING ZONE   DOSIMETRY   GENERAL AREA   BULK/WIPE  MISC  QUIT
                                            ──────────────────────
                                            MISCELLANEOUS
                                            Transfer
                                            Notification Letters
                                            Pack Databases
                                            Quality Assurance
                                            Back up data
                                            List Commands
                                            List Command and Shop
                                            ==> Exit to Main Menu
                                            ──────────────────────

       Use the up and down cursor keys to choose an option from this menu

═══════════════════════════════════════════════════════════════════════
```

-Step 2-

With the shadow bar on "Transfer" as shown above, press "ENTER." The following screen will be displayed:

```
──────────────────────────────
  Insert disk in drive A
──────────────────────────────
```

Press any key to continue...

-Step 3-

Press any key to start the transfer of data from the floppy disk. The following message will appear:

```
Checking for duplicates
```

The program is checking to see if there are any duplicate sample numbers.

-Step 4-

After checking and finding no duplicates, the following will be displayed:

```
No duplicates found
Starting to transfer now
```

If duplicates are found, see step 5.

To the left of the displayed message you will see the number of records increment as they are transferred.

When the transfer is complete, you will be returned to the MISCELLANEOUS MENU.

-Step 5-

If duplicates are found they will be printed and the following message will be displayed:

```
There are duplicate records on this floppy
Edit the records before transferring
```

The program will then return to the MISCELLANEOUS MENU.

NOTIFICATION LETTERS

-Step 1-

Select MISC from the IHIMS MENU. The MISCELLANEOUS MENU will be displayed as below:

MISCELLANEOUS MENU

BREATHING ZONE	DOSIMETRY	GENERAL AREA	BULK/WIPE	MISC QUIT
			MISCELLANEOUS	
			Transfer	
			Notification Letters	
			Pack Databases	
			Quality Assurance	
			Back Up Data	
			List Commands	
			List Command and Shop	
			==> Exit to Main Menu	

Use the up and down cursor keys to choose an option from this menu.

-Step 2-

With the shadow bar on "Notification Letters" as shown above, press "ENTER." The following screen will then be displayed.

```
+))))))))))))))))))))))))))))))))))))))))))))))))),
*       Print  (A)ll or (I)ndividual  ?  A       *
*                                                *
.))))))))))))))))))))))))))))))))))))))))))))))))-
```

Press A to print All notifications, or press I for specific individual.

By keeping the default set to "A" and pressing "ENTER", all notifications entered since the last time notifications were printed will print. If the default is changed to "I" and "ENTER"

is pressed, the option of printing one notification enclosure exists using the sample number and CAS Number of the sample result needed.

-Step 3a-

Select "A" for (A)ll and press "ENTER". After a moment the following screen will be displayed:

```
+))))))))))))))))))))))))))))))))))))))))))))))),
*   Ready to print, press any key to start     *
*                                              *
.))))))))))))))))))))))))))))))))))))))))))))))-
```

All notification data entries entered since the last "Notify" program was run will reprint.

-Step 3b-

Select "I" for individual printout and press "ENTER". The following screen will appear:

```
+))))))))))))))))))))))))))))))))))))))))))))))),
*                                              *
*       Enter Sample Number:         -         *
*          Enter CAS Number:                   *
*                                              *
.))))))))))))))))))))))))))))))))))))))))))))))-
```

Enter Sample Number corresponding to the notification desired.

After completing the above fields and a moment or so has passed, the following screen will appear:

```
+))))))))))))))))))))))))))))))))))))))))))))))),
*                                              *
*  Ready to print, press any key to start      *
*                                              *
.))))))))))))))))))))))))))))))))))))))))))))))-
```

Only the notification enclosure requested will print.

-Step 4-

After all printing is complete, the following screen will be displayed:

```
+))))))))))))))))))))))))))))))))))))))))))))))))))))),
*                                                     *
*     Are the Printouts correct?  Y                   *
.))))))))))))))))))))))))))))))))))))))))))))))))))))-
```

You are being asked if all of the notification enclosures look correct. Are they on one sheet of paper? Did they print or did the printer malfunction? In other words do the notification enclosures look good enough to be sent to the activity as enclosures to a letter?

The program gives you a second chance if there was a mechanical problem and the enclosures need to be redone. If the enclosures need to be redone, change the default "Y" to "N" and press "ENTER."

The following screen will appear.

```
+))))))))))))))))))))))))))))))))))))))))))))))))))))),
* Discard Printouts, make appropriate changes and   *
* try again                                          *
.))))))))))))))))))))))))))))))))))))))))))))))))))))-
```

Press any key to continue....

You will be returned to Miscellaneous Menu to try again.

The process can be repeated after repairing your mechanical problems.

Once "ENTER" has been pressed with the default "Y" selected, the records are marked to insure that once a notification enclosure has been printed for an individual sampled on a specific date, a second notification enclosure will not be generated for the same sample. Messages will appear to say the Notify database is being posted and that cover letters for the notification enclosures printed have been created in the A: drive. After this is done and any key is pressed, you will return to the MISC menu.

-Step 5-

Edit and print cover letter from a: drive using your word processing software.

PACK DATABASES

"PACK" is a dBase term used to describe the removal of data previously marked for deletion. Data marked for deletion is retained in the database until "PACKed." The database needs to be PACKed occasionally to remove erroneous data marked for deletion. "PACKing" removes bad data, conserves space in the database and speeds up data handling.

NOTE: Once "PACKed", data removed cannot be retrieved.

-Step 1-

Select MISC from the IHIMS MENU. The MISCELLANEOUS MENU will be displayed as below:

MISCELLANEOUS MENU

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE **MISC** QUIT

MISCELLANEOUS

Transfer

Notification Letters

Pack Databases

Quality Assurance

Back up data

List Commands

List Command and Shop

==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "Pack Databases" as shown above, press "ENTER." The following screen will be displayed:

Packing **<filename>**.DBF, Be patient

Each filename (LOGBOOK, RESULTS, NOISEDOS, etc.) will appear in turn. As the records are copied and reindexed, the counts will be displayed below and to the left of the above screen.

QUALITY ASSURANCE

-Step 1-

Select MISC from the IHIMS MENU. The MISCELLANEOUS MENU will be displayed as below:

MISCELLANEOUS MENU

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE **MISC** QUIT

MISCELLANEOUS

Transfer

Notification Letters

Pack Databases

Quality Assurance

Back up data

List Commands

List Command and Shop

==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "Quality Assurance" as shown above press "ENTER." The following window will be displayed next to the MISCELLANEOUS MENU:

List Log Book

List MISSING Samples

List MISSING Results

List MISSING TWAs

Count by Sampletype

==>Exit To MISC Menu

A description of each listing follows:

List Log Book - Provides a list of Log Book entries from a range of sample numbers requested (See page 5-12).

List MISSING Samples - Provides a list of missing sample numbers from a range of sample numbers requested (See page 5-14).

List MISSING Results - Provides a list of sample numbers that have been entered into the log book, but no results have been entered for the range of sample numbers requested (See page 5-16).

List MISSING TWAs - Provides a list of sample numbers which have results posted in the results data base, however no TWAs have been calculated between specified sample numbers (See page 5-18).

Count by Sampletype - Provides a count of the number of samples taken for each category (Breathing Zone, General Area, Noise Dosimetry, etc) between specified dates (See page 5-20).

LIST LOG BOOK

List Log Book

List MISSING Samples

List MISSING Results

List MISSING TWAs

Count by Sampletype

==>Exit To MISC Menu

-Step 1-

With the shadow bar on "List Log Book" as shown above, press "ENTER." The following screen will be displayed:

Logbook Listing
Enter Inclusive Sample Numbers

Beginning with ____-____ and Ending with ____-____

-Step 2-

Enter the beginning and ending sample numbers for block of sample numbers in question.

When the ending sample number is entered as below, a list will be printed:

NOTE: Beginning sample number must exist in the database or program will not work.

Logbook Listing
Enter Inclusive Sample Numbers

Beginning with **BS90-0002** and Ending with **BS90-0006**

INDUSTRIAL HYGIENE DEPARTMENT
LOG BOOK LISTING
Sample Number: BS90-0002 to BS90-0006

```
BS90-0002 12/05/90 PWC WELD IND-011-14 BZ JEB 120 LEAD     0.0300
                                              120 ANTIMONY 0.0050
BS90-0003 12/05/90 PWC WELD IND-013-00 BZ JEB 180 COPPER   0.0500
BS90-0004 12/05/90 PWC MACH IND-009-18 BZ RCH 240 LEAD     0.0090
BS90-0006 12/07/90 PWC WELD IND-011-00 ND RCH 400 NOISE   86.9
```

Sample Number, Date, Command, Shop, Opcode, Sample Type, Sampler, Sample Time, Stressor, and Result are provided in the listing.

LIST MISSING SAMPLES

List Log Book

List MISSING Samples

List MISSING Results

List MISSING TWAs

Count by Sampletype

==>Exit To MISC Menu

-Step 1-

With the shadow bar on "List MISSING Samples" as shown above, press "ENTER." The following screen will be displayed:

Missing Samples Listing
Enter Inclusive Sample Numbers

Beginning with ____-____ and Ending with ____-____

-Step 2-

Enter the beginning and ending sample numbers for block of sample numbers in question.

When the ending sample number is entered as below, a list will be printed:

NOTE: Beginning sample number must exist in the database or program will not work.

Missing Samples Listing
Enter Inclusive Sample Numbers

Beginning with **BS90-0002** and Ending with **BS90-0006**

INDUSTRIAL HYGIENE DEPARTMENT
MISSING SAMPLES LISTING
Sample Number: BS90-0002 to BS90-0006

BS90-0005

This utility enables you to find missing sample numbers. As in the listing above, BS90-0005 is missing. All information for this sample number must be entered.

LIST MISSING RESULTS

List Log Book

List MISSING Samples

List MISSING Results

List MISSING TWAs

Count by Sampletype

==>Exit To MISC Menu

-Step 1-

With the shadow bar on "List MISSING Results" as shown above, press "ENTER." The following screen will be displayed:

Missing Results Listing
Enter Inclusive Sample Numbers

Beginning with _____-_____ and Ending with _____-_____

-Step 2-

Enter the beginning and ending sample numbers for block of sample numbers in question.

When the ending sample number is entered as below, a list will be printed:

Missing Results Listing
Enter Inclusive Sample Numbers

Beginning with **BS90-0002** and Ending with **BS90-0006**

INDUSTRIAL HYGIENE DEPARTMENT
MISSING RESULTS LISTING
Sample Number: BS90-0002 to BS90-0006

BS90-0004 12/05/90 PWC MACHINE IND-009-18 BZ JEB 240 LEAD 0.0000

Sample Number, Date, Command, Shop, Opcode, Sample Type, Sampler, Sample Time, Stressor, and Result are listed.

Sample number BS90-0004 has been entered into the LOG BOOK, however no RESULTS have been entered. Use "Enter Results Only," page 1-17, to enter results.

LIST MISSING TWAs

List Log Book

List MISSING Samples

List MISSING Results

List MISSING TWAs

Count by Sampletype

==>Exit To MISC Menu

-Step 1-

With the shadow bar on "List MISSING TWAs" as shown above, press "ENTER." The following screen will be displayed:

Missing TWAs Listing
Enter Inclusive Sample Numbers

Beginning with ____-____ and Ending with ____-____

-Step 2-

Enter the beginning and ending sample numbers for block of sample numbers in question.

When the ending sample number is entered as below, a list will be printed:

Missing TWAs Listing
Enter Inclusive Sample Numbers

Beginning with **BS90-0002** and Ending with **BS90-0006**

INDUSTRIAL HYGIENE DEPARTMENT
MISSING TWAS LISTING

BS90-0002	12/05/90	PWC WELDING	LEAD	120	0.0300
			ANTIMONY	120	0.0050
BS90-0003	12/05/90	PWC WELDING	COPPER FUME	180	0.0500

Sample Number, Date, Command, Shop, Stressor, Sample Time, and Result are provided in the listing.

Samples are listed in LOG BOOK and RESULTS are entered, however TWAs have not been calculated. Use "Enter Time Weighted Averages," page 1-27, to calculate TWAs.

COUNT BY SAMPLETYPE

```
List Log Book

List MISSING Samples

List MISSING Results

List MISSING TWAs

Count by Sampletype

 ==>Exit To MISC Menu
```

-Step 1-

With the shadow bar on "Count by Sampletype" as shown above, press "ENTER." The following screen will be displayed:

```
     COUNT SAMPLES BY TYPE

 From: 01/01/80   To: 12/18/90
```

Default **"To":** Date is the current computer date.

-Step 2-

Enter dates for the time period in question. Example: How many samples of each type were collected last year? You can then compare to this year.

To get the number of each sample type for last year enter "From" and "To" as below:

```
     COUNT SAMPLES BY TYPE

 From: 01/01/89   To: 12/31/89
```

The following table would be printed:

18 December 90

INDUSTRIAL HYGIENE DEPARTMENT
SAMPLES COLLECTED
FOR 01/01/89 TO 12/31/89

BREATHING ZONE=	99
NOISE DOSIMETRY=	142
GENERAL AREA=	25
BULK=	49
WIPE=	12
TOTAL	327

BACK UP DATA

-Step 1-

Select MISC from the IHIMS MENU. The MISCELLANEOUS MENU will be displayed as below:

```
                          MISCELLANEOUS MENU
═══════════════════════════════════════════════════════════════════════
BREATHING ZONE   DOSIMETRY   GENERAL AREA   BULK/WIPE  MISC  QUIT
                                            ──────────────────────
                                            MISCELLANEOUS

                                            Transfer

                                            Notification Letters

                                            Pack Databases

                                            Quality Assurance

                                            Back up data

                                            List Commands

                                            List Command and Shop

                                            ==> Exit to Main Menu
                                            ──────────────────────

       Use the up and down cursor keys to choose an option from this menu

═══════════════════════════════════════════════════════════════════════
```

With the shadow bar on "Back up data" as shown above, press "ENTER." The following screen will be displayed:

```
+)))))))))))))))))))))))))))))))))))))))))))))))),
*     Data Base File Backup Routine           *
/))))))))))))))))))))))))))))))))))))))))))))))))1
*         Get Your Disks Ready!!              *
.))))))))))))))))))))))))))))))))))))))))))))))))2
```

Press any key to begin.

-Step 2-

After pressing any key to begin, the database will automatically back up to the hard drive.

-Step 3-

After backup to the hard drive has been completed, the following screen appears:

```
S))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
   Do you want to back up to floppies ? N
S))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
```

Press Y to back up data on floppy disks, or else press "ENTER".

If the default "N" is changed to "Y" and ENTER is pressed, the computer screen will prompt you to load the disks into the A:drive. The number of disks needed will depend on the size of your database. After "back up to floppies" is completed, you will return to the Miscellaneous Menu.

-Step 4-

If the default "N" is not changed and "ENTER" is pressed, you will return to the Miscellaneous Menu.

LIST COMMANDS

-Step 1-

Select MISC from the IHIMS MENU. The MISCELLANEOUS MENU will be displayed as below:

MISCELLANEOUS MENU

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE **MISC** QUIT

MISCELLANEOUS

Transfer

Notification Letters

Pack Databases

Quality Assurance

Back up data

List Commands

List Command and Shop

==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "List Commands" as shown above, press "ENTER." A list of commands entered into the database as of the current date will be printed:

```
COMMAND LISTING AS OF 18 December 90
THERE ARE 8 COMMANDS IN THIS DATABASE

ACU-2
ACU-4
NADEP
NAVSTA
PWC
SIMA LITTLE CREEK
SIMA NORFOLK
USS ROOSEVELT
```

After the list is printed the screen will return to the MISCELLANEOUS MENU.

LIST COMMAND AND SHOP

-Step 1-

Select MISC from the IHIMS MENU. The MISCELLANEOUS MENU will be displayed as below:

MISCELLANEOUS MENU

BREATHING ZONE	DOSIMETRY	GENERAL AREA	BULK/WIPE **MISC** QUIT
			MISCELLANEOUS
			Transfer
			Notification Letters
			Pack Databases
			Quality Assurance
			Back up data
			List Commands
			List Command and Shop
			==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "List Command and Shop" as shown above press "ENTER." A list of commands, with shops, entered into the database as of the current date will be printed:

```
COMMAND SHOP LISTING AS OF 18 December 90
THERE ARE 25 COMMAND SHOP COMBINATIONS IN THIS DATABASE

COMMAND        SHOP
ACU-2          CARPENTER       THERE ARE 5 SHOPS FOR THIS COMMAND
               DESERT COVE
               ENGINE
               MACHINE
               WELDING

ACU-4          BATTERY         THERE ARE 4 SHOPS FOR THIS COMMAND
               CARPENTER
    ... And the list would continue...
```

After the list is printed, the screen will return to the MISCELLANEOUS MENU.

SECTION 6

SATELLITE ENTRY
GETTING STARTED

-Step 1_

Start from the dot (.) prompt in DBASE IV. To use IHIMS Satellite Entry enter <DO SIH_MAIN> at the dot (.) prompt.

The following message will appear on the screen for approximately three seconds:

```
INDUSTRIAL HYGIENE
INFORMATION MANAGEMENT SYSTEM (1994)
SATELLITE DATA ENTRY
Version 1.1 October 1994
```

The Satellite IHIMS menu will then be displayed:

```
                    SATELLITE IHIMS MAIN MENU

BREATHING ZONE   DOSIMETRY   GENERAL AREA   BULK/WIPE   MISC   QUIT


    Satellite Personal Breathing Zone Samples Data Entry/Edit
```

-Step 2-

The shadow bar is moved with the right and left cursor arrow keys to select the desired subject. At the bottom of the screen is a brief definition of the options available. Press "ENTER" to activate and display the pull down menu for the subject desired.

BREATHING ZONE MENU

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE MISC QUIT
BREATHING ZONE SAMPLES

Enter Background/results
Edit Results
==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

A brief description of the 3 options are listed below:

Enter Background/ results	-	Enter background sampling information. Results may also be entered if received from laboratory. If results are not available, enter just background and CAS number(s) for stressor(s). Pg. 6-3
Edit results	-	Used to edit background and results data. Pg. 6-6
==> Exit to Main Menu	-	Exits to Main Menu.

SATELLITE
ENTER BACKGROUND/RESULTS

-Step 1-

Select BREATHING ZONE from the SATELLITE IHIMS MENU. The BREATHING ZONE MENU will be displayed as below:

BREATHING ZONE MENU

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE MISC QUIT
BREATHING ZONE SAMPLES

Enter Background/results
Edit Results
==> Exit to Main Menu

Use the up and down cursor keys to choose an option from menu

---

-Step 2-

With the shadow bar on "Enter Background/results" as shown above, press "ENTER." The following screen will then be displayed:

Insert floppy in drive A

Press any key to continue...

-Step 3-

Insert a formatted disk into drive A, then press any key to start data entry.

If the floppy disk already contains "Background" sample data, the screen in Step 5 will be displayed.

The following BREATHING ZONE AIR SAMPLE DATA ENTRY screen will be displayed if disk is blank:

-Step 4-

```
BREATHING ZONE AIR SAMPLE DATA ENTRY SCREEN        Date of
Sampling:02/14/90
 Activity:_________________  Shop:_______________   Location:_______
NAME Last:_________________ First:_______________   SSN: ___-__-____
              Worksite:_____________________
             Job Title:_______________ (M)ilitary or (C)ivilian: C
                 Shift: 1
Frequency of Operation: 1    Duration of Operation: 1
Opcode:___-__-__
Respirator: ___-____  | Material(s) Used: |   Ventilation:
                      | 1_________________ |
                      | 2_________________ | Meet Specs ? Used ? N

             Sampler:___
       Sample Number:____-____
         Sample Type:__
                Task:___________________________
     Sample Duration:__0
          Date Sent:02/14/90       Date Analyzed:02/14/90  TAD? N
```

(field definitions appear here)

Complete data entry as specified in the "ENTER BACKGROUND/ RESULTS" Section 1, of this manual.

-Step 5-

When using satellite entry for entering BACKGROUND/RESULTS data and you put in a floppy which already contains data, the following menu will be displayed:

```
There are results on this floppy

1. Add Data
2. Change Floppy
3. Erase Data
4. Exit to menu
Enter Choice (1-4) 0
```

A brief description of the four options are listed below:

Add Data - Initiates the same data input routine as in step 4 above, adding records to information already on the floppy disk.

Change Floppy - If this selection is made, the following screen will be displayed:

```
                    ____________________________________
                       Insert new floppy in drive A
                    ____________________________________
Press any key to continue...
```

Upon completing this action, the same data routine is initiated as in step 4 above.

Erase Data - Upon selecting this menu choice, the following screen will be displayed:

```
                    ____________________________
                       Are you sure ? N
                    ____________________________
```

An "N" for no response will return to the previous ("There are results on this floppy") menu.

A "Y" for yes response will erase data from the floppy. Upon completing this action, the same data routine is initiated as in step 4 above.

Exit to menu - Upon making this selection, the computer will return to SATELLITE BREATHING ZONE MENU.

SATELLITE
EDIT RESULTS

-Step 1-

Select BREATHING ZONE from the SATELLITE IHIMS MENU. The BREATHING ZONE menu will be displayed as below:

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE MISC QUIT
BREATHING ZONE SAMPLES

Enter Background/results
Edit Results
==> Exit to Main Menu

Use the up and down cursor keys to choose an option from menu

-Step 2-

With the shadow bar on "Edit Results" as shown above, press "ENTER." The following screen will then be displayed:

Insert floppy in drive A
Press any key to continue

-Step 3-

Insert floppy disk into drive A, then press any key to edit results. The BREATHING ZONE SAMPLE EDITING screen will then appear.

BREATHING ZONE SAMPLE EDITING
ENTER SAMPLE NUMBER TO EDIT OR PRESS ENTER TO QUIT

Enter Sample Number to Edit -

-Step 4-

Complete editing results as specified in the "EDIT RESULTS" Section 1, of this manual.

When editing, if a floppy containing no data or one that does not contain the specific type data for which the menu is addressing, the following message will be displayed:

```
There are no samples on this disk
   Press any key to continue
```

After a key is pressed, the program will return to the BREATHING ZONE SAMPLE EDITING screen. Press "ENTER" and the "Do you want to ADD a stressor to a sample number" screen will be displayed, press "ENTER" again to return to the SATELLITE BREATHING ZONE MENU.

SATELLITE
NOISE DOSIMETRY

-Step 1-

Select DOSIMETRY from the SATELLITE IHIMS MENU. The NOISE DOSIMETRY MENU will be displayed as below:

```
                    NOISE DOSIMETRY MENU
═══════════════════════════════════════════════════════════════
BREATHING ZONE   DOSIMETRY   GENERAL AREA   BULK/WIPE  MISC  QUIT
                 NOISE DOSIMETRY

                 Add New Data
                 Edit Data
                 ==> Exit to Main Menu
                 ____________________________________________

      Use the up and down cursor keys to choose an option from this menu

═══════════════════════════════════════════════════════════════
```

A brief description of the options are listed below:

Add New Data - Enter dosimetry background and sampling data.
Pg. 6-9

Edit Data - Used to edit background and data. Sample numbers are used to access data records.
Pg. 6-12

==> Exit to Main Menu - Exit to SATELLITE IHIMS MENU.

SATELLITE
NOISE DOSIMETRY
ADD NEW DATA

-Step 1-

Select DOSIMETRY from the SATELLITE IHIMS MENU. The NOISE DOSIMETRY MENU will be displayed as below:

```
                    NOISE DOSIMETRY MENU
═══════════════════════════════════════════════════════════════════
BREATHING ZONE   DOSIMETRY   GENERAL AREA   BULK/WIPE   MISC   QUIT
                 NOISE DOSIMETRY

                 Add New Data
                 Edit Data
                 ==> Exit to Main Menu

      Use the up and down cursor keys to choose an option from this menu
═══════════════════════════════════════════════════════════════════
```

-Step 2-

With the shadow bar on "Add New Data" as shown above press "ENTER." The following message will be displayed:

```
                    Insert floppy in drive A

  Press any key to continue...
```

-Step 3-

Insert floppy disk into drive A:, then press any key and the NOISE DOSIMETRY DATA ENTRY screen will be displayed.

If the floppy disk already contains "Dosimetry" sample data, the screen in Step 5 will be displayed.

The following NOISE DOSIMETRY DATA ENTRY screen will be displayed if the floppy disk does not already contain "Dosimetry" sample data (See Step 4).

-Step 4-

```
Noise Dosimetry Data Entry Screen
                                        Date:03/15/90
   Activity:____________________          Shop:_______________
   Location:____________________     Sampled By:___

           Sample Number:____-____
               Last Name:_________________ First Initial:_
        SSN/Badge Number:___-__-____
               Job Title:_________________ (M)il or (C)iv:C
                Worksite:_________________
                  Opcode:___-___-__

                    Task:_________________
          Noise Source A:_________________
          Noise Source B:_________________
          Noise Source C:_________________
      Hearing Protection:__      TAD ? N
             Sample Time:____
           Lavg or LDOD:  0.00  TWA:  0.0  SAMPLE TYPE:__
```

(field definitions appear here)

Complete data entry as specified in the Noise Dosimetry, Section 2, "ADD NEW DATA".

-Step 5-

When using satellite entry for entering DOSIMETRY data and you put in a floppy which already contains data, the following menu will be displayed:

```
There are noise dosimetry records on this floppy

            1. Add Data
            2. Change Floppy
            3. Erase Data
            4. Exit to menu
            Enter Choice (1-4) 0
```

A brief description of the four options are listed below.

Add Data - Initiates the same data input routine as in step 4 above, adding records to information already on the floppy disk.

Change Floppy - If this selection is made the following screen will be displayed:

```
Insert new floppy in drive A

Press any key to continue...
```

Upon completing this action, the same data routine is initiated as in step 4 above.

Erase Data - Upon selecting this menu choice, the following screen will be displayed:

```
Are you sure ? N
```

An "N" for no response will return to the previous ("There is a noise dosimetry record on this floppy") menu.

A "Y" for yes response will erase data from the floppy. Upon completing this action, the same data routine is initiated as in step 4 above.

Exit to menu - Upon making this selection, the computer will return to SATELLITE DOSIMETRY MENU.

SATELLITE
NOISE EDIT

-Step 1-

Select DOSIMETRY from the SATELLITE IHIMS MENU. The NOISE DOSIMETRY MENU will be displayed as below:

```
                    NOISE DOSIMETRY MENU
═══════════════════════════════════════════════════════════════
BREATHING ZONE   DOSIMETRY   GENERAL AREA   BULK/WIPE  MISC  QUIT
                 NOISE DOSIMETRY

                 Add New Data
                 Edit Data
                 ==> Exit to Main Menu

      Use the up and down cursor keys to choose an option from this menu
═══════════════════════════════════════════════════════════════
```

-Step 2-

With the shadow bar on "Edit Data" as shown above, press "ENTER." The following message will be displayed:

```
                    Insert floppy in drive A

  Press any key to continue...
```

-Step 3-

Insert floppy disk into drive A:, then press any key and the NOISE DOSIMETRY EDITING screen will be displayed:

```
NOISE DOSIMETRY EDITING
ENTER SAMPLE NUMBER TO EDIT OR ENTER TO QUIT

Enter Sample Number to Edit:     -
```

-Step 4-

Complete editing as specified in the Noise Dosimetry, Section 2, "NOISE EDIT".

SATELLITE ENTRY
GENERAL AREA

-Step 1-

Select GENERAL AREA from the SATELLITE IHIMS MENU. The GENERAL AREA MENU will be displayed as below:

GENERAL AREA MENU

BREATHING ZONE DOSIMETRY **GENERAL AREA** BULK/WIPE MISC QUIT

GENERAL AREA SAMPLES

Enter General Area Samples

Edit General Area Samples

==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

A brief description of the options from the GENERAL AREA MENU are listed below:

Enter General Area Samples - Enter background sampling information. Results may also be entered if received from the laboratory. If results are not available, enter just background and CAS Number(s) for stressor(s).

Pg. 6-15

Edit General Area Samples - Used to edit background and results data. Sample numbers are used to access data records.

Pg. 6-18

==> Exit to Main Menu - Exit to IHIMS MENU.

ENTER GENERAL AREA SAMPLES

-Step 1-

Select GENERAL AREA from the SATELLITE IHIMS MENU. The GENERAL AREA MENU will be displayed as below:

GENERAL AREA MENU

BREATHING ZONE **DOSIMETRY** **GENERAL AREA** BULK/WIPE MISC QUIT

GENERAL AREA SAMPLES

Enter General Area Samples

Edit General Area Samples

==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "Enter General Area Samples" as shown above, press "ENTER." The following screen will then be displayed:

Insert floppy in drive A

Press any key to continue...

-Step 3-

Insert floppy disk into drive A:, then press any key and the GENERAL AREA AIR SAMPLE DATA ENTRY screen will be displayed.

If the floppy disk already contains "General Area" sample data, the screen in Step 5 will be displayed.

The following GENERAL AREA AIR SAMPLE DATA ENTRY screen will be displayed if the floppy disk does not already contain "General

Area" sample data (See Step 4).

-Step 4-

```
_____________________________________________________________________
_________
GENERAL AREA AIR SAMPLE DATA ENTRY SCREEN          Date of
Sampling:06/03/90
_____________________________________________________________________
__________ Activity:_________________ Shop:_____________
Location:__________
                      Worksite:____________
                         Shift:1
        Frequency of Operation:1      Duration of Operation:1
 Opcode:___-___-__
_____________________________________________________________________
 Material Used:_____________________  Ventilation:_________________
 Material Used:_____________________  Meet Specs ?__  Used ? N
=====================================================================
                   Sampler:___
             Sample Number:____-____
                      Task:__________________
      Distance from Source:____
                  Boundary:_
           Sample Duration:___
               Sample Type:__

                 Date Sent:06/03/90     Date Analyzed:06/03/90
=====================================================================

                 (field definitions appear here)
```

Complete data entry as specified in the IHIMS Manual, General Area Samples, Section 3.

-Step 5-

When using satellite entry for entering GENERAL AREA data and you put in a floppy which already contains data, the following menu will be displayed:

```
_____________________________________________________________
     There are general area samples on this floppy
_____________________________________________________________
                 ____________________________________
                        1. Add Data
                        2. Change Floppy
                        3. Erase Data
```

```
4. Exit to menu
Enter Choice (1-4) 0
```

A brief description of the four options are listed below:

Add Data - Initiates the same data input routine as in step 4 above, adding records to information already on the floppy disk.

Change Floppy - If this selection is made, the following screen will be displayed:

```
Insert new floppy in drive A

Press any key to continue...
```

Upon completing this action, the same data routine is initiated as in step 4 above.

Erase Data - Upon selecting this menu choice, the following screen will be displayed.

```
Are you sure ? N
```

An "N" for no response will return to the previous ("There are results on this floppy") menu.

A "Y" for yes response will erase data from the floppy. Upon completing this action, the same data routine is initiated as in step 4 above.

Exit to menu - Upon making this selection, the computer will return to SATELLITE GENERAL AREA MENU.

EDIT GENERAL AREA SAMPLES

-Step 1-

Select GENERAL AREA from the SATELLITE IHIMS MENU. The GENERAL AREA MENU will be displayed as below:

GENERAL AREA MENU

BREATHING ZONE **DOSIMETRY** **GENERAL AREA** BULK/WIPE MISC QUIT

GENERAL AREA SAMPLES

Enter General Area Samples

Edit General Area Samples

==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "Edit General Area Samples" as shown above, press "ENTER." The following screen will then be displayed:

Insert floppy in drive A

Press any key to continue...

The following screen will be displayed:

GENERAL AREA SAMPLE EDITING
ENTER SAMPLE NUMBER TO EDIT OR PRESS ENTER TO QUIT

ENTER SAMPLE NUMBER TO EDIT -

-Step 3-

Edit data following the EDIT GENERAL AREA SAMPLES instructions in Section 3.

SATELLITE
BULK/WIPE

-Step 1-

Select BULK/WIPE from the SATELLITE IHIMS MENU. The BULK/WIPE MENU will be displayed as below:

BULK/WIPE MENU

BREATHING ZONE	DOSIMETRY	GENERAL AREA	**BULK/WIPE** MISC QUIT
			BULK/WIPE SAMPLES
			Add Bulk Data
			Edit Bulk Data
			Add Wipe Data
			Edit Wipe Data
			==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

A brief description of the options from the BULK/WIPE MENU are listed below:

Add Bulk Data - Enter background sampling information. Results may also be entered if received from the laboratory. If results are not available, enter just background and CAS Number(s) for stressor(s).
Pg. 6- 22

Edit Bulk Data - Used to edit BULK sample background and results data. Sample numbers are used to access data records. Used to delete a record or used to add a stressor.
Pg. 6-25

Add Wipe Data	- Enter background sampling information. Results may also be entered if received from the laboratory. If results are not available, enter just background and CAS Number(s) for stressor(s). Pg. 6-27
Edit Wipe Data	- Used to edit WIPE background and results data. Sample numbers are used to access data records. Used to delete a record or used to add a stressor. Pg. 6-31
==> Exit to Main Menu	- Exit to IHIMS MENU.

SATELLITE BULK SAMPLES
ADD NEW DATA

-Step 1-

Select BULK/WIPE from the SATELLITE IHIMS MENU. The BULK/WIPE MENU will be displayed as below:

BULK/WIPE MENU

```
BREATHING ZONE   DOSIMETRY   GENERAL AREA   BULK/WIPE  MISC  QUIT
                                            BULK/WIPE SAMPLES

                                            Add Bulk Data

                                            Edit Bulk Data

                                            Add Wipe Data

                                            Edit Wipe Data

                                            ==> Exit to Main Menu

       Use the up and down cursor keys to choose an option from this menu
```

-Step 2-

With the shadow bar on "Add Bulk Data" as shown above, press "ENTER." The following menu will be displayed on the screen:

```
                    Insert floppy in drive A

    Press any key to continue...
```

-Step 3-

Insert floppy disk into drive A:, then press any key and the BULK SAMPLE DATA ENTRY screen will be displayed.

If the floppy disk already contains BULK sample data, the screen in Step 5 will be displayed.

The following BULK DATA ENTRY screen will be displayed if the floppy disk does not already contain BULK sample data (See Step 4):

-Step 4-

```
INDUSTRIAL HYGIENE BULK SAMPLE DATA ENTRY SCREEN

  Date:07/24/90    Command:_____________________  Location:_______
                 Shop/Code:___________________________
    Associated Air Samples:____-____    ____-____

   Site of Sample different from above ?



 Opcode:___-___-__
 Source of Contamination:_______________________________
                 Sampler:___
           Sample Number:____-____
    Material Description:_____________________________________
                    Task:_____________________________________
             Sample Site:_______________________
                Boundary:_
             Sample Type:__
               Date Sent:07/24/90    Date Analyzed:07/24/90
```

Complete data entry as specified in the BULK/WIPE section of the "BULK SAMPLE ENTRY", instructions in Section 4.

-Step 5-

When using satellite entry for entering BULK/WIPE data and you put in a floppy which already contains data, the following menu will be displayed:

```
There are bulk samples on this floppy

1. Add Data
2. Change Floppy
3. Erase Data
```

4. Exit to menu

Enter Choice (1-4) 0

A brief description of the four options are listed below:

Add Data - Initiates the same data input routine as in step 4 above, adding records to information already on the floppy disk.

Change Floppy - If this selection is made, the following screen will be displayed:

Insert new floppy in drive A

Press any key to continue...

Upon completing this action, the same data routine is initiated as in step 4 above.

Erase Data - Upon selecting this menu choice, the following screen will be displayed:

Are you sure ? N

An "N" for no response will return to the previous ("There are results on this floppy") menu.

A "Y" for yes response will erase data from the floppy. Upon completing this action, the same data routine is initiated as in step 4 above.

Exit to menu - Upon making this selection, the computer will return to the BULK/WIPE MENU.

SATELLITE
EDIT BULK DATA

-Step 1-

Select BULK/WIPE from the SATELLITE IHIMS MENU. The BULK/WIPE MENU will be displayed as below:

BULK/WIPE MENU

BREATHING ZONE	DOSIMETRY	GENERAL AREA	**BULK/WIPE** MISC QUIT
			BULK/WIPE SAMPLES
			Add Bulk Data
			Edit Bulk Data
			Add Wipe Data
			Edit Wipe Data
			==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "Edit Bulk Data" as shown above, press "ENTER." The following screen will then be displayed:

Insert floppy in drive A

Press any key to continue...

-Step 3-

The following screen will be displayed:

```
BULK SAMPLE EDITING
ENTER SAMPLE NUMBER TO EDIT OR PRESS ENTER TO QUIT

ENTER SAMPLE NUMBER TO EDIT     -
```

Complete editing as specified in the BULK/WIPE section of "EDIT BULK SAMPLES", Section 4.

SATELLITE WIPE SAMPLES
ADD NEW DATA

-Step 1-

Select BULK/WIPE from the SATELLITE IHIMS MENU. The BULK/WIPE MENU will be displayed as below:

BULK/WIPE MENU

BREATHING ZONE DOSIMETRY GENERAL AREA **BULK/WIPE** MISC QUIT

BULK/WIPE SAMPLES

Add Bulk Data

Edit Bulk Data

Add Wipe Data

Edit Wipe Data

==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "Add Wipe Data" as shown above, press "ENTER." The following menu will be displayed on the screen:

Insert floppy in drive A

Press any key to continue...

-Step 3-

Insert floppy disk into drive A:, then press any key and the WIPE SAMPLE DATA ENTRY screen will be displayed.

If the floppy disk already contains WIPE sample data, the screen in Step 5 will be displayed.

The following WIPE DATA ENTRY screen will be displayed if the floppy disk does not already contain WIPE sample data (See Step 4):

-Step 4-

```
INDUSTRIAL HYGIENE WIPE SAMPLE DATA ENTRY SCREEN

  Date:07/24/90    Command:____________________  Location:_______
                 Shop/Code:___________________________
    Associated Air Samples:____-____    ____-____

 Opcode:___-___-__
   Source of Contamination:_______________________________
                   Sampler:___
            Sample Number:____-____
                     Task:_____________________________________
               Sample Site:______________________
                  Boundary:__
               Sample Type:__
                 Date Sent:07/24/90    Date Analyzed:07/24/90
```

Complete data entry as specified in the BULK/WIPE section of the "WIPE SAMPLE ENTRY", instructions in Section 4.

-Step 5-

When using satellite entry for entering BULK/WIPE data and you put in a floppy which already contains data, the following menu will be displayed:

```
There are wipe samples on this floppy

        1. Add Data
        2. Change Floppy
        3. Erase Data
        4. Exit to menu
        Enter Choice (1-4) 0
```

A brief description of the four options are listed below:

Add Data - Initiates the same data input routine as in step 4 above, adding records to information already on the floppy disk.

Change Floppy - If this selection is made, the following screen will be displayed:

```
Insert new floppy in drive A

Press any key to continue...
```

Upon completing this action, the same data routine is initiated as in step 4 above.

Erase Data - Upon selecting this menu choice, the following screen will be displayed:

```
Are you sure ? N
```

An "N" for no response will return to the previous ("There are results on this floppy")

menu.

A "Y" for yes response will erase data from the floppy. Upon completing this action, the same data routine is initiated as in step 4 above.

Exit to menu - Upon making this selection, the computer will return of the BULK/WIPE MENU.

SATELLITE
EDIT WIPE DATA

-Step 1-

Select BULK/WIPE from the SATELLITE IHIMS MENU. The BULK/WIPE MENU will be displayed as below:

BULK/WIPE MENU

BREATHING ZONE DOSIMETRY GENERAL AREA **BULK/WIPE** MISC QUIT

BULK/WIPE SAMPLES

Add Bulk Data

Edit Bulk Data

Add Wipe Data

Edit Wipe Data

==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

- Step 2-

With the shadow bar on "Edit Wipe Data" as shown above, press "ENTER." The following screen will then be displayed:

Insert floppy in drive A

Press any key to continue...

-Step 3-

The following screen will be displayed.

```
WIPE SAMPLE EDITING
ENTER SAMPLE NUMBER TO EDIT OR PRESS ENTER TO QUIT

ENTER SAMPLE NUMBER TO EDIT     -
```

Complete editing as specified in the BULK/WIPE section of the "EDIT WIPE SAMPLES", instructions in Section 4.

SATELLITE
MISCELLANEOUS

-Step 1-

Select MISC from the SATELLITE IHIMS MENU. The MISCELLANEOUS MENU will be displayed as below:

MISCELLANEOUS MENU

BREATHING ZONE DOSIMETRY GENERAL AREA BULK/WIPE MISC QUIT

MISCELLANEOUS

Print Data

==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

A brief description of the options from the SATELLITE MISCELLANEOUS MENU are listed below:

Print Data - Data recorded on floppy disk will be printed for the different types of data. Data can be checked before transferring to the main database. Use "Delete Logbook" to edit.
Pg. 6-34

==> Exit to Main Menu - Exit to IHIMS MENU.

PRINT DATA

-Step 1-

Select MISC from The SATELLITE IHIMS MENU. The MISCELLANEOUS MENU will be displayed as below:

MISCELLANEOUS MENU

BREATHING ZONE	DOSIMETRY	GENERAL AREA	BULK/WIPE	MISC	QUIT

MISCELLANEOUS

Print Data

==> Exit to Main Menu

Use the up and down cursor keys to choose an option from this menu

-Step 2-

With the shadow bar on "Print Data" as shown above, press "ENTER." The following screen will be displayed:

Insert floppy in Drive A:

Press any key to continue...

-Step 3-

Press any key to get to the following menu:

```
Floppy disk print Menu

1.  Noise Dosimetry

2.  Breathing Zone

3.  General Area

4.  Bulk

5.  Wipe

6.  Exit to Menu

Enter Choice (1-6)  O
```

-Step 4-

Make a selection from the print menu by pressing a number 1-6. The selection depends on the type(s) of data which was entered on the floppy. As each choice is made, a table of the input will be printed. Prior to printing data, the following screen will be displayed:

```
Be sure printer is ON

Press enter to begin printing
```

If no samples have been entered for your choice (1-6), the following will appear on the screen:

```
No samples of this type on disk
```

APPENDIX A
Operations Codes - OPCODES Dictionary

Operation Code	Operation Description
CLE-000-00	**CLERICAL**
CON-000-00	**CONSTRUCTION**
CON-001-00	STRUCTURE FABRICATION/REPAIR, MULTIPLE OPERATIONS
CON-001-01	STRUCTURE FABRICATION, WHARF BUILDING
CON-001-02	STRUCTURE FABRICATION CEILING INSTALLATION/REPAIR
CON-001-03	STRUCTURE FABRICATION ROOFING INSTALLATION/REPAIR
CON-001-04	STRUCTURE REPAIR, PAINT REMOVAL, SCRAPING
CON-001-05	STRUCTURE REPAIR, PAINT REMOVAL, SANDING
CON-001-06	STRUCTURE REPAIR, PAINT REMOVAL, CHEMICAL
CON-001-07	STRUCTURE REPAIR, PAINT REMOVAL, THERMAL
CON-001-08	ASBESTOS, LOCK/DOOR, REPAIR/INSTALL/MAINTAIN
CON-001-99	CONSTRUCTION, STRUCTURE FABRICATION/REPAIR, NEC
CON-002-00	ELECTRICAL INSTALLATION/REPAIR
CON-002-99	ELECTRICAL INSTALLATION/REPAIR, NEC
CON-003-00	PLASTERING AND RELATED TASKS, MULTIPLE OPERATIONS
CON-003-01	DRYWALL INSTALLATION
CON-003-99	PLASTERING AND RELATED TASKS, NEC
CON-004-00	PLUMBING, INSTALLATION/REPAIR
CON-004-01	PLUMBING, INSTALLATION/REPAIR, TRANSITE WATER PIPE
CON-004-99	PLUMBING, INSTALLATION/REPAIR, NEC
CON-005-00	STRUCTURE DEMOLITION, MULTIPLE OPERATIONS
CON-005-01	STRUCTURE DEMOLITION, ROOF REMOVAL
CON-005-02	STRUCTURE DEMOLITION, FLOOR TILE REMOVAL
CON-005-03	STRUCTURE DEMOLITION, SIDING REMOVAL
CON-005-04	STRUCTURE DEMOLITION, CEILING TILE REMOVAL
CON-005-05	STRUCTURE DEMOLITION, TRANSITE PANEL REMOVAL
CON-005-06	STRUCTURE DEMOLITION, MASTIC REMOVAL
CON-005-99	STRUCTURE DEMOLITION, NEC
CON-006-00	CEMENTING AND RELATED TASKS
CON-006-99	CEMENTING AND RELATED TASKS, NEC
CON-007-00	EXCAVATING/GRADING
CON-008-00	PAVING
CON-008-99	PAVING, NEC
CON-999-99	NEC
IND-000-00	**INDUSTRIAL**
IND-001-00	METAL CLEANING MECHANICAL, MULTIPLE OPERATIONS
IND-001-01	ABRASIVE BLAST, HYDRO
IND-001-02	ABRASIVE BLAST, GLASS BEAD
IND-001-03	ABRASIVE BLAST, MINERAL GRIT
IND-001-04	ABRASIVE BLAST, SAND
IND-001-05	ABRASIVE BLAST, SHOT
IND-001-06	ABRASIVE BLAST, ORGANICS
IND-001-07	BARREL FINISHING
IND-001-08	METAL CLEANING MECHANICAL, GRINDING
IND-001-09	METAL CLEANING MECHANICAL, POLISHING AND BUFFING
IND-001-10	METAL CLEANING MECHANICAL, WIREBRUSHING

IND-001-11	METAL CLEANING MECHANICAL, SANDING
IND-001-12	METAL CLEANING MECHANICAL, NEEDLEGUNNING
IND-001-13	ABRASIVE BLAST CLEANUP
IND-001-14	ABRASIVE BLAST, GLOVE BOX
IND-001-15	HOPPER TENDING/HELPER
IND-001-99	METAL CLEANING MECHANICAL, NEC

Operation Code	Operation Description
IND-002-00	METAL CLEANING, CHEMICAL, MULTIPLE OPERATIONS
IND-002-01	ACID CLEANING, BRIGHT DIP
IND-002-02	ACID CLEANING, PICKLING
IND-002-03	ACID CLEANING, DESCALING
IND-002-04	ALKALI CLEANING, DESCALING
IND-002-05	ALKALI CLEANING, ETCHING
IND-002-06	DEGREASING, WIPE CLEANING
IND-002-07	DEGREASING, DIPPING
IND-002-08	DEGREASING, SPRAY
IND-002-09	DEGREASING, VAPOR
IND-002-10	DEGREASING, EMULSION
IND-002-11	ACID CLEANING, WIPE
IND-002-12	ACID CLEANING, SPRAY
IND-002-13	STEAM CLEANING
IND-002-14	CHEMICAL PAINT STRIPPING
IND-002-15	GAUGE CLEANING/ FLUSHING
IND-002-16	DETERGENT CLEANING, WASHING
IND-002-99	METAL CLEANING, CHEMICAL, NEC
IND-003-00	METAL CLEANING, OTHER
IND-003-01	ULTRASONIC CLEANING
IND-003-99	METAL CLEANING, OTHER, NEC
IND-004-00	ELECTROPLATING, MULTIPLE OPERATIONS
IND-004-01	SELECTIVE PLATING
IND-004-02	OPEN TANK ELECTROPLATING
IND-004-03	VAPORIZATION ELECTROPLATING
IND-004-99	ELECTROPLATING, NEC
IND-005-00	PAINTING, MULTIPLE OPERATIONS
IND-005-01	SPRAY PAINTING, COMPRESSED AIR
IND-005-02	SPRAY PAINTING, AIRLESS
IND-005-03	SPRAY PAINTING, ELECTROSTATIC
IND-005-04	POWDER, COATING
IND-005-05	BRUSH/ROLLER PAINTING
IND-005-06	DIP PAINTING
IND-005-07	SPRAY PAINTING, AEROSOL CAN
IND-005-99	PAINTING, NEC
IND-006-00	COATING OPERATIONS, MULTIPLE OPERATIONS
IND-006-01	DIP COATING
IND-006-02	WIPE COATING
IND-006-03	BRUSH/ROLLER COATING
IND-006-04	SPRAY COATING
IND-006-05	TINNING
IND-006-99	COATING OPERATIONS, NEC
IND-007-00	METAL FORMING, MULTIPLE OPERATIONS
IND-007-01	METAL FORMING, FORGING
IND-007-02	METAL FORMING, EXTRUSION
IND-007-03	METAL FORMING, BENDING/FORMING
IND-007-04	METAL FORMING, SQUEEZING
IND-007-05	METAL FORMING, DRAWING
IND-007-99	METAL FORMING, NEC
IND-008-00	HEAT TREATING, HARDENING, MULTIPLE OPERATIONS
IND-008-01	HEAT TREATING, CARBURIZING
IND-008-02	HEAT TREATING, CYANIDING
IND-008-03	HEAT TREATING, GAS NITRIDING
IND-008-04	HEAT TREATING, ANNEALING
IND-008-05	HEAT TREATING, QUENCHING

Operation Code	Operation Description
IND-008-99	HEAT TREATING, HARDENING, NEC
IND-009-00	FOUNDRY OPERATIONS, MULTIPLE OPERATIONS
IND-009-01	MOLDING, GREEN SAND
IND-009-02	MOLDING, SHELL
IND-009-03	MOLDING, INVESTMENT CASTING
IND-009-04	MOLDING, FULL MOLD
IND-009-05	COREMAKING, SODIUM SILICATE
IND-009-06	COREMAKING, HOT BOX SYSTEM
IND-009-07	COREMAKING, NO BAKE
IND-009-08	COREMAKING, SHELL
IND-009-09	CASTING, FURNACE MELTING
IND-009-10	CASTING, OPEN HEARTH
IND-009-11	CASTING, ARC FURNACE
IND-009-12	CASTING, INDUCTION FURNACE
IND-009-13	CASTING, CRUCIBLE FURNACE
IND-009-14	CASTING, CUPOLA
IND-009-15	TRANSFER, POURING, COOLING
IND-009-16	SHAKEOUT
IND-009-17	CLEANING AND FINISHING
IND-009-18	BABBITTING
IND-009-19	SMALL MELT/POUR OPERATIONS
IND-009-99	FOUNDRY OPERATIONS, NEC
IND-010-00	METAL MACHINING, MULTIPLE OPERATIONS
IND-010-01	METAL MACHINING, CUTTING
IND-010-02	METAL MACHINING, PIERCING OR PUNCHING
IND-010-03	METAL MACHINING, SAWING
IND-010-04	METAL MACHINING, ABRASIVE GRINDING
IND-010-05	METAL MACHINING, DRILLING AND BORING
IND-010-06	METAL MACHINING, MILLING
IND-010-07	METAL MACHINING, TURNING
IND-010-08	METAL MACHINING, SHAPING AND SLOTTING
IND-010-09	METAL RIVETING
IND-010-99	METAL MACHINING, NEC
IND-011-00	WELDING, MULTIPLE OPERATIONS
IND-011-01	RESISTANCE WELDING
IND-011-03	OXYFUEL WELDING
IND-011-04	SOLID STATE WELDING
IND-011-05	BRAZING
IND-011-06	LASER WELDING
IND-011-07	ELECTRON BEAM WELDING
IND-011-08	SHIELDED METAL ARC WELDING
IND-011-09	GAS METAL ARC WELDING
IND-011-10	GAS TUNGSTEN ARC WELDING
IND-011-11	PLASMA ARC WELDING
IND-011-12	AIR CARBON ARC WELDING
IND-011-13	ELECTRICAL SOLDERING
IND-011-14	TORCH SOLDERING
IND-011-15	FLUX CORE PROCESSES
IND-011-16	HOT WORK HELPER/FIREWATCH
IND-011-99	WELDING, NEC
IND-012-00	THERMAL SPRAYING, MULTIPLE OPERATIONS
IND-012-01	ELECTRIC ARC SPRAYING
IND-012-02	FLAME SPRAYING
IND-012-03	PLASMA SPRAYING
IND-012-99	THERMAL SPRAYING, NEC
IND-013-00	CUTTING, MULTIPLE OPERATIONS
IND-013-01	THERMAL CUTTING
IND-013-02	OXYGEN CUTTING
IND-013-03	ARC CUTTING
IND-013-04	ELECTRON BEAM CUTTING
IND-013-05	LASER CUTTING
IND-013-06	AIR CARBON ARC CUTTING
IND-013-07	PLASMA CUTTING
IND-013-99	CUTTING, NEC

IND-014-00	NON-DESTRUCTIVE TEST, MULTIPLE OPERATIONS
IND-014-01	NON-DESTRUCTIVE TEST, VISUAL
IND-014-02	NON-DESTRUCTIVE TEST, MAGNETIC PARTICLE TEST
IND-014-03	NON-DESTRUCTIVE TEST, LIQUID PENETRANT TEST
IND-014-04	NON-DESTRUCTIVE TEST, ULTRASONIC TEST
IND-014-05	NON-DESTRUCTIVE TEST, ACOUSTICAL EMISSION TEST
IND-014-06	NON-DESTRUCTIVE TEST, RADIOGRAPHIC TEST
IND-014-07	NON-DESTRUCTIVE TEST, LASER INSPECTION
IND-014-08	NON-DESTRUCTIVE TEST, WEIGHT TEST
IND-014-08	NON-DESTRUCTIVE TEST, ACID SPOT TESTING
IND-014-99	NON-DESTRUCTIVE TEST, NEC
IND-015-00	PLASTICS/RUBBER PROCESSING, MULTIPLE OPERATIONS
IND-015-01	PLASTICS/RUBBER POTTING
IND-015-02	PLASTICS/RUBBER DEPOTTING
IND-015-03	PLASTICS/RUBBER MOLDING
IND-015-04	PLASTICS/RUBBER FOAMING
IND-015-05	PLASTICS/RUBBER GRINDING

Operation Code	Operation Description
IND-015-06	PLASTICS/RUBBER CUTTING
IND-015-07	PLASTICS/RUBBER DRILLING
IND-015-08	PLASTICS/RUBBER GLUING
IND-015-09	PLASTICS/RUBBER MIXING
IND-015-10	HELMET POUR
IND-015-11	PLAQUE POUR
IND-015-12	PLASTICS/RUBBER SANDING
IND-015-13	PLASTICS/RUBBER POLISHING AND BUFFING
IND-015-14	PLASTICS/RUBBER HEAT SEALING
IND-015-99	PLASTICS/RUBBER PROCESSING, NEC
IND-016-00	MAN MADE FIBERS, MULTIPLE OPERATIONS
IND-016-01	MAN MADE FIBERS LAYUP, HAND
IND-016-02	MAN MADE FIBERS LAYUP, SPRAY
IND-016-03	MAN MADE FIBERS GRINDING/SANDING
IND-016-04	MAN MADE FIBERS CUTTING
IND-016-05	MAN MADE FIBERS DRILLING
IND-016-99	MAN MADE FIBERS, NEC
IND-017-00	INSULATION, ASBESTOS, MULTIPLE OPERATIONS
IND-017-01	ASBESTOS, INSTALLATION
IND-017-02	ASBESTOS, CLASS I, NPE REMOVAL
IND-017-03	ASBESTOS, FABRICATION
IND-017-04	ASBESTOS, NON-CONTAINMENT REMOVAL
IND-017-05	ASBESTOS, CLASS I, MULTIPLE GLOVE BAG REMOVAL
IND-017-06	ASBESTOS, GASKET WORK
IND-017-07	ASBESTOS, AMBIENT SAMPLING
IND-017-08	ASBESTOS, ENCAPSULATION
IND-017-09	ASBESTOS, CLASS I, MINI-ENCLOSURE REMOVAL
IND-017-10	ASBESTOS, CLASS III, MINI-ENCLOSURE REMOVAL
IND-017-11	ASBESTOS, CLASS III, SINGLE GLOVE BAG REMOVAL
IND-017-12	ASBESTOS, MECHANICAL LOADER BAGGING
IND-017-13	ASBESTOS, HEPA VACUUM MAINTENANCE
IND-017-14	ASBESTOS, CLASS I, GLOVEBOX REMOVAL
IND-017-15	ASBESTOS, CLASS I, WATERSPRAY REMOVAL
IND-017-99	INSULATION, ASBESTOS, NEC
IND-018-00	INSULATION, MAN MADE FIBERS, MULTIPLE OPERATIONS
IND-018-01	MAN MADE FIBERS, INSTALLATION
IND-018-02	MAN MADE FIBERS, REMOVAL
IND-018-03	MAN MADE FIBERS, FABRICATION
IND-018-99	INSULATION, MAN MADE FIBERS, NEC
IND-019-00	INSULATION, OTHER
IND-019-01	INSTALLATION
IND-019-02	REMOVAL
IND-019-03	FABRICATION
IND-019-99	INSULATION, OTHER, NEC

IND-020-00	WOODWORKING, MULTIPLE OPERATIONS
IND-020-01	WOODWORKING, CUTTING
IND-020-02	WOODWORKING, JOINTING
IND-020-03	WOODWORKING, DRILLING
IND-020-04	WOODWORKING, MORTISING/ROUTING
IND-020-05	WOODWORKING, TURNING LATHES
IND-020-06	WOODWORKING, SANDING, DRUM
IND-020-07	WOODWORKING, SANDING, DISK
IND-020-08	WOODWORKING, SANDING, BELT
IND-020-09	WOODWORKING, SANDING, HAND
IND-020-10	WOODWORKING, PRESERVATIVE APPLICATION
IND-020-11	WOODWORKING, GLUING
IND-020-12	WOODWORKING, STAINING
IND-020-13	WOODWORKING, TRANSPARENT FINISHES
IND-020-99	WOODWORKING, NEC
IND-021-00	STONE, MINERAL HANDLING, MULTIPLE OPERATIONS
IND-021-01	STONE, MINERAL HANDLING, INSTALLATION
IND-021-02	STONE, MINERAL HANDLING, REMOVAL
IND-021-03	STONE, MINERAL HANDLING, CUTTING
IND-021-04	STONE, MINERAL HANDLING, DRILLING
IND-021-99	STONE, MINERAL HANDLING, NEC

Operation Code	Operation Description
IND-022-00	ELECTRONICS REPAIR, MULTIPLE OPERATIONS
IND-022-01	ELECTRONICS REPAIR, INSTALLATION/REPAIR
IND-022-02	ELECTRONICS REPAIR, CALIBRATION, MANOMETRIC
IND-022-03	ELECTRONICS REPAIR, CALIBRATION, RFR EQUIPMENT
IND-022-99	ELECTRONICS REPAIR, NEC
IND-023-00	EQUIPMENT REPAIR, MULTIPLE OPERATIONS
IND-023-01	EQUIPMENT REPAIR, HYDRAULICS
IND-023-02	EQUIPMENT REPAIR, GENERATOR
IND-023-03	EQUIPMENT REPAIR, AIRCRAFT ENGINE TESTING
IND-023-04	EQUIPMENT REPAIR, MECHANICAL ASSEMBLY/REPAIR
IND-023-05	EQUIPMENT REPAIR, ENGINE ACCESSORY TESTING
IND-023-06	EQUIPMENT REPAIR, BRAKE/GEARBOX REPAIR
IND-023-07	EQUIPMENT REPAIR, FUEL ACCESSORY TESTING
IND-023-08	EQUIPMENT REPAIR, ELECTRICAL
IND-023-09	EQUIPMENT REPAIR, ENGINE TEST
IND-023-10	EQUIPMENT REPAIR, AIRCRAFT ENGINE PRESERVATION
IND-023-11	EQUIPMENT REPAIR, ORDNANCE TESTING
IND-023-99	EQUIPMENT REPAIR, NEC
IND-024-00	CHEMICAL PROCESSING
IND-024-99	CHEMICAL PROCESSING, NEC
IND-025-00	HM/HW HANDLING/CLEANUP, MULTIPLE OPERATIONS
IND-025-01	HM/HW HANDLING/CLEANUP, BALLAST INSTALLATION
IND-025-02	HM/HW HANDLING/CLEANUP, BALLAST REMOVAL
IND-025-03	HM/HW HANDLING/CLEANUP, ASBESTOS
IND-025-04	HM/HW HANDLING/CLEANUP, PCBs
IND-025-99	HM/HW HANDLING/CLEANUP, NEC
IND-026-00	EXPLOSIVE PRODUCTION, MULTIPLE OPERATIONS
IND-026-01	EXPLOSIVE PRODUCTION, PREMIX OPERATIONS
IND-026-02	EXPLOSIVE PRODUCTION, MIXING AND POURING
IND-026-03	EXPLOSIVE PRODUCTION, CLEANING MIXING EQUIPMENT
IND-026-99	EXPLOSIVE PRODUCTION, NEC
MED-000-00	**MEDICAL**
MED-001-00	MEDICAL, MULTIPLE OPERATIONS
MED-001-01	MEDICAL, ETO STERILIZATION
MED-001-02	MEDICAL, ANESTHETIC ADMINISTRATION

MED-001-03	MEDICAL, ANATOMICAL SPECIMEN PRESERVATION
MED-001-04	MEDICAL, TISSUE/ORGAN GROSSING
MED-001-05	MEDICAL, CAST CUTTING
MED-001-06	MEDICAL, CORRECTIVE LENS MANUFACTURE
MED-001-99	MEDICAL, NEC
MED-002-00	DENTAL, MULTIPLE OPERATIONS
MED-002-01	DENTAL, FILLING/DRILLING
MED-002-02	DENTAL, PROSTHETICS
MED-002-03	DENTAL, ETO STERILIZATION
MED-002-04	DENTAL, ANESTHETIC ADMINISTRATION
MED-002-99	DENTAL, NEC
MIL-000-00	**MILITARY SPECIFIC OPERATIONS**
MIL-001-00	WEAPONS HANDLING, MULTIPLE OPERATIONS
MIL-001-01	RANGE CLEANING
MIL-001-02	WEAPONS FIRING
MIL-001-03	RANGE SUPERVISION
MIL-001-04	PIT CLEANUP
MIL-001-05	TORPEDO FUELING/DEFUELING
MIL-001-06	TORPEDO DISASSEMBLY
MIL-001-99	WEAPONS HANDLING, NEC
MIL-002-00	FLIGHT LINE OPERATIONS, MULTIPLE OPERATIONS
MIL-002-01	FLIGHT LINE OPERATIONS, LINE TROUBLE SHOOTING
MIL-002-02	FLIGHT LINE OPERATIONS, AIRCRAFT LOADING
MIL-002-03	FLIGHT LINE OPERATIONS, LAUNCH AND RECOVERY
MIL-002-04	FLIGHT LINE OPERATIONS, FUEL/DEFUEL AIRCRAFT
MIL-002-05	FLIGHT LINE OPERATIONS, LIQUID OXYGEN HANDLING
MIL-002-99	FLIGHT LINE OPERATIONS, NEC

Operation Code	Operation Description
MIL-003-00	SHIPBOARD PROCESSES, MULTIPLE OPERATIONS
MIL-003-01	SHIPBOARD PROCESSES, WATCHSTANDING, BRIDGE
MIL-003-02	SHIPBOARD PROCESSES, WATCHSTANDING, FLIGHT LINE
MIL-003-03	SHIPBOARD PROCESSES, WATCHSTANDING, ENGINEERING
MIL-003-04	SHIPBOARD PROCESSES, WATCHSTANDING, OTHER
MIL-003-05	SHIPBOARD PROCESSES, DRILLS, BECCE
MIL-003-06	SHIPBOARD PROCESSES, DRILLS, GENERAL QUARTERS
MIL-003-99	SHIPBOARD PROCESSES, NEC
MIS-000-00	**MISCELLANEOUS, MULTIPLE OPERATIONS**
MIS-000-01	EQUIPMENT MONITORING
MIS-000-02	MACHINE SEWING
MIS-000-03	LAUNDRY/DRY CLEANING OPERATIONS
MIS-000-99	MISCELLANEOUS OPERATIONS, NEC
PRO-000-00	**PROFESSIONAL,TECH AND MGMT**
PRO-001-00	PROFESSIONAL AND TECHNICAL, MULTIPLE OPERATIONS
PRO-001-01	LABORATORY CHEMICAL ANALYSIS
PRO-001-02	MUSICAL PERFORMANCE
PRO-001-03	COMPUTER OPERATIONS
PRO-001-04	ASBESTOS INSPECTION AND BULK SAMPLING
PRO-001-05	ASBESTOS INSPECTION
PRO-001-99	PROFESSIONAL/TECHNICAL, NEC
PRO-002-00	MANAGEMENT, MULTIPLE OPERATIONS
PRO-002-01	SUPERVISION
PRO-002-99	MANAGEMENT, NEC
RND-000-00	**RESEARCH AND DEVELOPMENT**
RND-000-99	RESEARCH AND DEVELOPMENT, NEC

SER-000-00 **SERVICE**

SER-001-00 TRANSPORTATION, MULTIPLE OPERATIONS
SER-001-01 TRANSPORTATION, TRUCK OPERATION
SER-001-02 TRANSPORTATION, TRAIN OPERATION
SER-001-03 TRANSPORTATION, TRACTOR TRAILER OPERATION
SER-001-05 TRANSPORTATION, RAILROAD TRACK MAINTENANCE
SER-001-99 TRANSPORTATION, NEC

SER-002-00 MOTOR VEHICLE MAINTENANCE, MULTIPLE OPERATIONS
SER-002-01 MOTOR VEHICLE MAINTENANCE, TESTING
SER-002-02 MOTOR VEHICLE REPAIR/OVERHAUL
SER-002-03 MOTOR VEHICLE MAINTENANCE, BRAKE WORK
SER-002-04 MOTOR VEHICLE MAINTENANCE, CLUTCH WORK
SER-002-05 MOTOR VEHICLE MAINTENANCE, BODY WORK
SER-002-99 MOTOR VEHICLE MAINTENANCE, NEC

SER-003-00 PEST CONTROL, MULTIPLE OPERATIONS
SER-003-01 PEST CONTROL, MIXING
SER-003-02 PEST CONTROL, PUMP SPRAY
SER-003-03 PEST CONTROL, FOGGING
SER-003-04 PEST CONTROL, FUMIGATION
SER-003-99 PEST CONTROL, NEC

SER-004-00 BUILDING MAINTENANCE, MULTIPLE OPERATIONS
SER-004-01 BUILDING MAINTENANCE, SWEEPING
SER-004-02 BUILDING MAINTENANCE, AC/R CHARGING
SER-004-03 BUILDING MAINTENANCE, CRAWL SPACE/ATTIC
SER-004-04 BUILDING MAINTENANCE, CLASS IV ASBESTOS
SER-004-99 BUILDING MAINTENANCE, NEC

SER-005-00 GROUNDS MAINTENANCE, MULTIPLE OPERATIONS
SER-005-01 GROUNDS MAINTENANCE, STREET SWEEPING
SER-005-02 GROUNDS MAINTENANCE, LAWN MAINTENANCE
SER-005-99 GROUNDS MAINTENANCE, NEC

Operation Code	Operation Description
SER-006-00	PROTECTIVE SERVICES, FIRE
SER-007-00	PROTECTIVE SERVICES, SECURITY, MULTIPLE OPERATION
SER-007-01	FIRING RANGE CLEANING
SER-007-02	WEAPONS FIRING
SER-007-03	FIRING RANGE SUPERVISION
SER-007-04	FIRING RANGE PIT CLEANING
SER-007-05	WEAPONS CLEANING
SER-007-06	DOCUMENT SHREDDING
SER-007-99	PROTECTIVE SERVICES, SECURITY, NEC
SER-008-00	GRAPHIC ARTS, MULTIPLE OPERATIONS
SER-008-01	GRAPHIC ARTS, SILK SCREENING
SER-008-02	GRAPHIC ARTS, PHOTOGRAPHY DEVELOPING
SER-008-03	GRAPHIC ARTS, PHOTOGRAPHY CHEMICAL MIXING
SER-008-04	GRAPHIC ARTS, PHOTOGRAPHY EQUIPMENT CLEANING
SER-008-99	GRAPHIC ARTS, NEC
SER-009-00	RECREATION
SER-010-00	PRODUCTION/DIST. OF UTILITIES, MULTIPLE OPERATION
SER-010-01	COMPRESSED AIR BREATHING
SER-010-02	BOILER CLEANING
SER-010-03	BOILER REPAIR
SER-010-04	EQUIPMENT MONITORING
SER-010-05	TRANSFORMER REPAIR/MAINTENANCE
SER-010-06	SHIP/SHORE CONNECTION

SER-010-07	ESP MAINTENANCE/CLEANING
SER-010-08	STEAM PIT MAINTENANCE
SER-010-99	PRODUCTION/DIST. OF UTITLITIES, NEC
SER-011-00	SUPPLY AND MATERIALS HANDLING, MULTIPLE OPERATION
SER-011-01	FOAM IN PLACE PACKAGING
SER-011-02	MATERIAL HANDLING EQUIPMENT OPERATION
SER-011-03	TOOL AND PARTS ISSUE
SER-011-04	CRANE OPERATION
SER-011-05	PACKAGING
SER-011-99	SUPPLY AND MATERIALS HANDLING, NEC
SER-012-00	PRINTING/REPRODUCTION, MULTIPLE OPERATIONS
SER-012-01	PRINTING/REPRODUCTION, DIAZO PRINTING
SER-012-02	PRINTING/REPRODUCTION, DOCUMENT PREPARATION
SER-012-03	PRINTING/REPRODUCTION EQUIPMENT CLEANING
SER-012-04	PRINTING/REPRODUCTION, OFFSET PRINTING
SER-012-05	PRINTING/REPRODUCTION, ENGRAVING
SER-012-99	PRINTING/REPRODUCTION, NEC
SER-013-00	COMMUNICATIONS, MULTIPLE OPERATIONS
SER-013-01	COMMUNICATIONS, TELETYPE OPERATION
SER-013-99	COMMUNICATIONS, NEC
SER-014-00	FOOD PREPARATION AND HANDLING
SER-014-99	FOOD PREPARATION AND HANDLING, NEC
SER-015-00	HW/SEWER TREATMENT
SER-015-99	HW/SEWER TREATMENT, NEC
SER-016-00	WATER TREATMENT
SER-016-99	WATER TREATMENT, NEC
SER-999-99	NEC

APPENDIX B
Stressor - Cas Number Dictionary

Stressor Name	Cas Number	OSHA 8-HR TWA	OSHA STEL	OSHA CEILING	ACGIH 8-HR TWA	ACGIH STEL	ACGIH CEILING	OSHA SKIN	APPX	ACGIH SKIN
ACETALDEHYDE	75-07-0	180	270	-----	------	------	45	N	A3	N
ACETIC ACID	64-19-7	25	-----	-----	25	37	------	N	--	N
ACETIC ANHYDRIDE	108-24-7	-----	-----	20	21	------	------	N	--	N
ACETONE	67-64-1	1800	2400	-----	1780	2380	------	N	--	N
ACETONE CYANOHYDRIN (As CN)	75-86-5	-----	-----	-----	-----	------	5	N	--	Y
ACETONITRILE	75-05-8	70	105	-----	67	101	------	N	--	Y
ACETOPHENONE	98-86-2				49	------	------	N	--	N
ACETYLENE	74-86-2	-----	-----	-----	------	------	------	N	--	N
ACETYLENE TETRABROMIDE	79-27-6	14	-----	-----	14	------	------	N	--	N
ACETYLSALICYLIC ACID (ASPIRIN)	50-78-2	5	-----	-----	5	------	------	N	--	N
ACROLEIN	107-02-8	0.25	0.80	-----	0.23	0.69	------	N	--	N
ACRYLAMIDE	79-06-1	0.03	-----	-----	0.03	------	------	Y	A2	Y
ACRYLIC ACID	79-10-7	30	-----	-----	5.9	------	------	Y	--	Y
ACRYLONITRILE	107-13-1	4.5	-----	22.5	4.3	------	------	Y	A2	Y
ADIPIC ACID	124-04-9	------	------	------	5	------	------	N	--	N
ADIPONITRILE	111-69-3	------	------	------	8.8	------	------	N	--	Y
ALDRIN	309-00-2	0.25	-----	-----	0.25	------	------	Y	--	Y
ALLYL ALCOHOL	107-18-6	5	10	-----	4.8	9.5	------	Y	--	Y
ALLYL CHLORIDE	107-5-1	3	6	-----	3.0	6.0	------	N	--	N
ALLYL GLYCIDYL ETHER (AGE)	106-92-3	22	44	-----	23	47	------	N	--	Y
ALLYL PROPYL DISULFIDE	2179-59-1	12	18	-----	12	18	------	N	--	N
ALUMINUM OXIDE,(a-ALUMINA) RESPIRABLE	1344-28-1A	5	-----	-----	------	------	------	N	--	N
ALUMINUM OXIDE,(a-ALUMINA) TOTAL DUST	1344-28-1B	10	-----	-----	10	------	------	N	--	N
ALUMINUM METAL, RESPIRABLE DUST (As Al)	7429-90-5F	5	-----	-----	------	------	------	N	--	N
ALUMINUM METAL, TOTAL DUST (As Al)	7429-90-5A	15	-----	-----	10	------	------	N	--	N
ALUMINUM PYRO POWDERS (As Al)	7429-90-5B	5	-----	-----	5	------	------	N	--	N
ALUMINUM WELDING FUMES (As Al)	7429-90-5C	5	-----	-----	5	------	------	N	--	N
ALUMINUM SOLUBLE SALTS (As Al)	7429-90-5D	2	-----	-----	2	------	------	N	--	N
ALUMINUM ALKYLS (NOC+) (As Al)	7429-90-5E	2	-----	-----	2	------	------	N	--	N
4-AMINODIPHENYL	92-67-1	-----	-----	-----	------	------	------	N	A1	Y
2-AMINOPYRIDINE	504-29-0	2	-----	-----	1.9	------	------	N	--	N
AMITROLE	61-82-5	0.2	-----	-----	0.2	------	------	N	--	N
AMMONIA	7664-41-7	-----	27	-----	17	24	------	N	--	N
AMMONIUM CHLORIDE FUME	12125-02-9	10	20	-----	10	20	------	N	--	N
AMMONIUM PERFLUOROOCTANOATE	3825-26-1	-----	-----	-----	0.1	------	------	N	--	N
AMMONIUM SULFAMATE, RESPIRABLE DUST	7773-06-0A	5	-----	-----	------	------	------	N	--	N
AMMONIUM SULFAMATE, TOTAL DUST	7773-06-0B	10	-----	-----	10	------	------	N	--	N
n-AMYL ACETATE	628-63-7	525	-----	-----	532	------	------	N	--	N
sec-AMYL ACETATE	626-38-0	650	-----	-----	665	------	------	N	--	N
ANILINE	62-53-3	8	-----	-----	7.6	------	------	Y	--	Y
ANISIDINE (o-, p-isomers)	29191-52-4	0.5	-----	-----	0.50	------	------	N	--	Y
ANTIMONY	7440-36-0	0.5	-----	-----	0.5	------	------	N	--	N
ANTIMONY TRIOXIDE (HANDLING AND USE)(Sb)	1309-64-4A	-----	-----	-----	0.5	------	------	N	--	N
ANTIMONY TRIOXIDE (PRODUCTION)(As Sb)	1309-64-4B	-----	-----	-----	------	------	------	N	A2	N
ANTU (Alpha naphthylthiourea)	86-88-4	0.3	-----	-----	0.3	------	------	N	--	N
ARGON	7440-37-1	-----	-----	-----	------	------	------	N	--	N
ARSENIC, ORGANIC	7440-38-2B	0.5	-----	-----	------	------	------	N	--	N
ARSENIC, INORGANIC	7440-38-2C	0.01	-----	-----	0.01	------	------	N	A1	N
ARSENIC TRIOXIDE (PRODUCTION)	1327-53-3	-----	-----	-----	------	------	------	N	A2	N
ARSINE	7784-42-1	0.2	-----	-----	0.16	------	------	N	--	N
ASBESTOS, AMOSITE	12172-73-5	-----	-----	-----	0.5	------	------	N	A1	N
ASBESTOS, CHRYSOTILE	12001-29-5A	-----	-----	-----	2	------	------	N	A1	N
ASBESTOS, NON-SPECIFIED	12001-29-5B	0.1	-----	1 EL	2	------	------	N	A1	N
ASBESTOS (TEM NIOSH 7402)	12001-29-5D	------	------	------	------	------	------	N	A1	N
ASBESTOS (TEM AHERA S/CC)	12001-29-5E	------	------	------	------	------	------	N	A1	N
NON-ASBESTOS	12001-29-5C	-----	-----	-----	------	------	------	N	--	N
ASBESTOS, CROCIDOLITE	12001-28-4	-----	-----	-----	0.2	------	------	N	A1	N
ASPHALT (PETROLEUM) FUMES	8052-42-4	-----	-----	-----	5	------	------	N	--	N
ATRAZINE	1912-24-9	5	-----	-----	5	------	------	N	--	N
AZINPHOS-METHYL	86-50-0	0.2	-----	-----	0.2	------	------	Y	--	Y
BARIUM, SOLUBLE COMPOUNDS (As Ba)	7440-39-3	0.5	-----	-----	0.5	------	------	N	--	N
BARIUM SULFATE, RESPIRABLE DUST	7727-43-7A	5	-----	-----	------	------	------	N	--	N
BARIUM SULFATE, TOTAL DUST	7727-43-7B	10	-----	-----	10	------	------	N	--	N
BENOMYL, RESPIRABLE DUST	17804-35-2A	5	-----	-----	------	------	------	N	--	N
BENOMYL, TOTAL DUST	17804-35-2B	10	-----	-----	10	------	------	N	--	N
BENZENE	71-43-2	3	15	-----	32	------	------	N	A2	N
BENZIDINE	92-87-5	-----	-----	-----	------	------	------	Y	A1	Y
BENZOYL PEROXIDE	94-36-0	5	-----	-----	5	------	------	N	--	N
BENZ(a)ANTHRACENE	56-55-3	------	------	------	------	------	------	N	A2	N
BENZO(a)PYRENE	50-32-8	-----	-----	-----	------	------	------	N	A2	N
BENZO[b]FLUORANTHENE	205-99-2	------	------	------	------	------	------	N	A2	N
BENZYL CHLORIDE	100-44-7	5	-----	-----	5.2	------	------	N	--	N
BERYLLIUM	7440-41-7	0.002	0.005	0.025	0.002	------	------	N	A2	N
BIPHENYL (DIPHENYL)	92-52-4	1	-----	-----	1.3	------	------	N	--	N
BISMUTH TELLURIDE, UNDOPED RESPIRABLE	1304-82-1A	5	-----	-----	------	------	------	N	--	N
BISMUTH TELLURIDE, UNDOPED TOTAL DUST	1304-82-1B	15	-----	-----	10	------	------	N	--	N
BISMUTH TELLURIDE (SE-DOPED)	1304-82-1C	5	-----	-----	5	------	------	N	--	N
BORATES, ANHYDROUS	1303-96-4A	10	-----	-----	1	------	------	N	--	N
BORATES, DECAHYDRATE	1303-96-4B	10	-----	-----	5	------	------	N	--	N
BORATES, PENTAHYDRATE	1303-96-4C	10	-----	-----	1	------	------	N	--	N
BORON OXIDE, RESPIRABLE DUST	1303-86-2A	5	-----	-----	------	------	------	N	--	N
BORON OXIDE, TOTAL DUST	1303-86-2B	10	-----	-----	10	------	------	N	--	N
BORON TRIBROMIDE	10294-33-4	-----	-----	10	------	------	10	N	--	N
BORON TRIFLUORIDE	7637-07-2	-----	-----	3	------	------	2.8	N	--	N
BROMACIL	314-40-9	10	-----	-----	10	------	------	N	--	N
BROMINE	7726-95-6	0.7	2	-----	0.66	2.0	------	N	--	N
BROMINE PENTAFLUORIDE	7789-30-2	0.7	-----	-----	0.72	------	------	N	--	N

BROMOFORM	75-25-2	5	-----	-----	5.2	------	------	Y	--	Y
1,3-BUTADIENE	106-99-0	2200	-----	-----	22	------	------	N	A2	N
BUTANE	106-97-8	1900	-----	-----	1900	------	------	N	--	N
2-BUTOXYETHANOL	111-76-2	120	-----	-----	121	------	------	Y	--	Y
n-BUTYL ACETATE	123-86-4	710	950	-----	713	950	------	N	--	N
sec-BUTYL ACETATE	105-46-4	950	-----	-----	950	------	------	N	--	N
tert-BUTYL ACETATE	540-88-5	950	-----	-----	950	------	------	N	--	N
BUTYL ACRYLATE	141-32-2	55	-----	-----	52	------	------	N	--	N
n-BUTYL ALCOHOL	71-36-3	-----	-----	150	------	------	152	N	--	Y
sec-BUTYL ALCOHOL	78-92-2	305	-----	-----	303	------	------	N	--	N
tert-BUTYL ALCOHOL	75-65-0	300	450	-----	303	------	------	N	--	N
BUTYLAMINE	109-73-9	-----	-----	15	------	------	15	Y	--	Y
tert-BUTYL CHROMATE (As CrO3)	1189-85-1	-----	-----	0.1	------	------	0.1	Y	--	Y
n-BUTYL GLYCIDYL ETHER (BGE)	2426-08-6	135	-----	-----	133	------	------	N	--	N
n-BUTYL LACTATE	138-22-7	25	-----	-----	30	------	------	N	--	N

Stressor Name	Cas Number	OSHA 8-HR TWA	OSHA STEL	OSHA CEILING	ACGIH 8-HR TWA	ACGIH STEL	ACGIH CEILING	OSHA SKIN	APPX	ACGIH SKIN
BUTYL MERCAPTAN	109-79-5	1.5	-----	-----	1.8	------	------	N	--	N
o-sec-BUTYLPHENOL	89-72-5	30	-----	-----	31	------	------	N	--	Y
p-tert-BUTYLTOLUENE	98-51-1	60	120	-----	6.1	------	------	N	--	N
CADMIUM AND COMPOUNDS (As Cd)	7440-43-9	0.005	-----	------	------	------	------	N	--	N
CALCIUM CARBONATE, RESPIRABLE DUST	1317-65-3A	5	-----	-----	------	------	------	N	--	N
CALCIUM CARBONATE, TOTAL DUST	1317-65-3B	15	-----	-----	10	------	------	N	--	N
CALCIUM CHROMATE (As Cr)	13765-19-0	------	-----	------	0.001	------	------	N	A2	N
CALCIUM CYANAMIDE	156-62-7	0.5	-----	-----	0.5	------	------	N	--	N
CALCIUM HYDROXIDE	1305-62-0	5	-----	-----	5	------	------	N	--	N
CALCIUM OXIDE	1305-78-8	5	-----	-----	2	------	------	N	--	N
CALCIUM SILICATE, RESPIRABLE DUST	1344-95-2A	5	-----	-----	------	------	------	N	--	N
CALCIUM SILICATE, TOTAL DUST	1344-95-2B	15	-----	-----	10	------	------	N	--	N
CALCIUM SULFATE (GYPSUM), RESPIRABLE	7778-18-9A	5	-----	-----	------	------	------	N	--	N
CALCIUM SULFATE (GYPSUM), TOTAL DUST	7778-18-9B	15	-----	-----	10	------	------	N	--	N
CAMPHOR, SYNTHETIC	76-22-2	2	-----	-----	12	19	------	N	--	N
CAPROLACTAM DUST	105-60-2A	1	3	-----	1	3	------	N	--	N
CAPROLACTAM VAPOR	105-60-2B	20	40	-----	23	46	------	N	--	N
CAPTAFOL	2425-06-1	0.1	-----	-----	0.1	------	------	N	--	Y
CAPTAN	133-06-2	5	-----	-----	5	------	------	N	--	N
CARBARYL	63-25-2	5	-----	-----	5	------	------	N	--	N
CARBOFURAN	1563-66-2	0.1	-----	-----	0.1	------	------	N	--	N
CARBON BLACK	1333-86-4	3.5	-----	-----	3.5	------	------	N	--	N
CARBON DIOXIDE	124-38-9	18000	54000	-----	9000	54000	------	N	--	N
CARBON DISULFIDE	75-15-0	12	36	-----	31	------	------	N	--	Y
CARBON MONOXIDE	630-08-0	40	-----	229	29	------	------	N	--	N
CARBON TETRABROMIDE	558-13-4	1.4	4	-----	1.4	4.1	------	N	--	N
CARBON TETRACHLORIDE	56-23-5	12.6	-----	-----	31	63	------	N	A3	Y
CARBONYL FLUORIDE	353-50-4	5	15	-----	5.4	13	------	N	--	N
CATECHOL	120-80-9	20	-----	-----	23	------	------	N	--	Y
CELLULOSE (PAPER FIBER), RESPIRABLE	9004-34-6A	5	-----	-----	------	------	------	N	--	N
CELLULOSE (PAPER FIBER), TOTAL DUST	9004-34-6B	15	-----	-----	10	------	------	N	--	N
CESIUM HYDROXIDE	21351-79-1	2	-----	-----	2	------	------	N	--	N
CHLORDANE	57-74-9	0.5	-----	-----	0.5	------	------	Y	--	Y
CHLORINATED CAMPHENE	8001-35-2	0.5	1	-----	0.5	1	------	Y	--	Y
CHLORINATED DIPHENYL OXIDE	55720-99-5	0.5	-----	-----	0.5	------	------	N	--	N
CHLORINE	7782-50-5	1.5	3	-----	1.5	2.9	------	N	--	N
CHLORINE DIOXIDE	10049-04-4	0.3	0.9	-----	0.28	0.83	------	N	--	N
CHLORINE TRIFLUORIDE	7790-91-2	-----	-----	0.4	------	------	0.38	N	--	N
CHLOROACETALDEHYDE	107-20-0	-----	-----	1	------	------	3.2	N	--	N
CHLOROACETONE	78-95-5	------	------	------	------	------	3.8	N	--	Y
a-CHLOROACETOPHENONE	532-27-4	0.3	-----	-----	0.32	------	------	N	--	N
CHLOROACETYL CHLORIDE	79-04-9	0.2	------	------	0.23	0.69	------	N	--	Y
CHLOROBENZENE	108-90-7	350	-----	-----	46	------	------	N	--	N
o-CHLOROBENZYLIDENE MALONONITRILE	2698-41-1	-----	-----	0.4	------	------	0.39	N	--	Y
CHLOROBROMOMETHANE	74-97-5	1050	-----	-----	1060	------	------	N	--	N
CHLORODIFLUOROMETHANE	75-45-6	3500	-----	-----	3540	------	------	N	--	N
CHLORODIPHENYL (42% CHLORINE)	53469-21-9	1	-----	-----	1	------	------	Y	--	Y
CHLORODIPHENYL (54% CHLORINE)	11097-69-1	0.5	-----	-----	0.5	------	------	Y	--	Y
CHLOROFORM	67-66-3	9.7	-----	-----	49	------	------	N	A2	N
BIS(CHLOROMETHYL)ETHER	542-88-1	-----	-----	-----	0.0047	------	------	N	A1	N
CHLOROMETHYL METHYL ETHER	107-30-2	-----	-----	-----	------	------	------	N	A2	N
1-CHLORO-1-NITROPROPANE	600-25-9	10	-----	-----	10	------	------	N	--	N
CHLOROPENTAFLUOROETHANE	76-15-3	6320	-----	-----	6320	------	------	N	--	N
CHLOROPICRIN	76-06-2	0.7	-----	-----	0.67	------	------	N	--	N
b-CHLOROPRENE	126-99-8	35	-----	-----	36	------	------	Y	--	Y
2-CHLOROPROPIONIC ACID	598-78-7	------	------	------	0.44	------	------	N	--	Y
o-CHLOROSTYRENE	2039-87-4	285	430	-----	283	425	------	N	--	N
o-CHLOROTOLUENE	95-49-8	250	-----	-----	259	------	------	N	--	N
CHLORPYRIFOS	2921-88-2	0.2	-----	-----	0.2	------	------	N	--	Y
CHROMIC ACID AND CHROMATES (As CrO3)	7440-47-3F	-----	-----	0.1	------	------	------	N	--	N
CHROMITE ORE PROCESSING (As Cr)	7440-47-3	-----	-----	-----	0.05	------	------	N	A1	N
CHROMIUM METAL (As Cr)	7440-47-3A	1	-----	-----	0.5	------	------	N	--	N
CHROMIUM (VI) SOLUBLE COMPOUNDS (As Cr)	7440-47-3D	-----	-----	-----	0.05	------	------	N	--	N
CHROMIUM (VI) INSOLUBLE COMPOUND (As Cr)	7440-47-3E	-----	-----	-----	0.05	------	------	N	A1	N
CHROMYL CHLORIDE	14977-61-8	-----	-----	-----	0.16	------	------	N	--	N
CHRYSENE	218-01-9	-----	-----	-----	------	------	------	N	A2	N
CLOPIDOL, RESPIRABLE FRACTION	2971-90-6A	5	-----	-----	------	------	------	N	--	N
CLOPIDOL, TOTAL DUST	2971-90-6B	15	-----	-----	10	------	------	N	--	N
COAL DUST, RESPIRABLE QUARTZ (<5% SiO2)	COAL DUST	2	-----	-----	2	------	------	N	--	N
COAL DUST, RESPIRABLE QUARTZ (>5% SiO2)	COAL DUST-A	0.1	-----	-----	0.1	------	------	N	--	N
COAL TAR PITCH VOLATILES AS BENZENE SOL.	65996-93-2	0.2	-----	-----	0.2	------	------	N	A1	N
COBALT	7440-48-4	0.05	-----	-----	0.05	------	------	N	--	N
COBALT CARBONYL (As Co)	10210-68-1	0.1	-----	-----	0.1	------	------	N	--	N
COBALT HYDROCARBONYL (As Co)	16842-03-8	0.1	-----	-----	0.1	------	------	N	--	N
COPPER FUME (As Cu)	7440-50-8A	0.1	-----	-----	0.2	------	------	N	--	N
COPPER DUST AND MISTS (As Cu)	7440-50-8B	1	-----	-----	1	------	------	N	--	N

COTTON DUST, RAW	COTTON DUST	1	-----	-----	0.2	------	------	N	--	N
CRAG HERBICIDE (SESONE), RESPIRABLE DUST	136-78-7A	5	-----	-----	------	------	------	N	--	N
CRAG HERBICIDE (SESONE), TOTAL DUST	136-78-7B	10	-----	-----	------	------	------	N	--	N
CRESOL, ALL ISOMERS	1319-77-3	22	-----	-----	22	------	------	Y	--	Y
CROTONALDEHYDE	4170-30-3	6	-----	-----	5.7	------	------	N	--	N
CRUFOMATE	299-86-5	5	-----	-----	5	------	------	N	--	N
CUMENE	98-82-8	245	-----	-----	246	------	------	N	--	Y
CYANAMIDE	420-04-2	2	-----	-----	2	------	------	N	--	N
CYANIDES (As CN)	151-50-8	5	-----	-----	5	------	------	Y	--	Y
CYANIDE, HYDROGEN	74-90-8	-----	5	-----	------	------	5	Y	--	Y
CYANIDE, CALCIUM	592-01-8	5	-----	-----	------	------	5	N	--	Y
CYANIDE, POTASSIUM	151-01-08	5	-----	-----	------	------	5	N	--	Y
CYANIDE, SODIUM	143-33-9	5	-----	-----	------	------	5	N	--	Y
CYANOGEN	460-19-5	20	-----	-----	21	------	------	N	--	N
CYANOGEN CHLORIDE	506-77-4	-----	-----	0.6	------	------	0.75	N	--	N
CYCLOHEXANE	110-82-7	1050	-----	-----	1030	------	------	N	--	N
CYCLOHEXANOL	108-93-0	200	-----	-----	206	------	------	N	--	Y
CYCLOHEXANONE	108-94-1	100	-----	-----	100	------	------	N	--	Y
CYCLOHEXENE	110-83-8	1015	-----	-----	1010	------	------	N	--	N
CYCLOHEXYLAMINE	108-91-8	40	-----	-----	41	------	------	N	--	N
CYCLONITE (RDX)	121-82-4	1.5	-----	-----	1.5	------	------	N	--	Y
CYCLOPENTADIENE	542-92-7	200	-----	-----	203	------	------	N	--	N
CYCLOPENTANE	287-92-3	1720	-----	-----	1720	------	------	N	--	N
CYHEXATIN	13121-70-5	5	-----	-----	5	------	------	N	--	N
2,4-D (DICHLORYLPHENOXY-ACETIC ACID)	94-75-7	10	-----	-----	10	------	------	N	--	N
DDT (DICHLORODIPHENYLTRICHLOROETHANE)	50-29-3	1	-----	-----	1	------	------	Y	--	N
DDVP (DICHLORIVOS)	62-73-7	1	-----	-----	0.90	------	------	Y	--	Y
DECABORANE	17702-41-9	0.3	0.9	-----	0.25	0.75	------	Y	--	Y
DEMETON (SYSTOX)	8065-48-3	0.1	-----	-----	0.11	------	------	Y	--	Y
DIACETONE ALCOHOL	123-42-2	240	-----	-----	238	------	------	N	--	N
DIAZINON	333-41-5	0.1	-----	-----	0.1	------	------	N	--	Y
DIAZOMETHANE	334-88-3	0.4	-----	-----	0.34	------	------	N	--	N

Stressor Name	Cas Number	OSHA 8-HR TWA	OSHA STEL	OSHA CEILING	ACGIH 8-HR TWA	ACGIH STEL	ACGIH CEILING	OSHA SKIN	APPX	ACGIH SKIN
DIBORANE	19287-45-7	0.1	-----	-----	0.11	------	------	N	--	N
2-N-DIBUTYLAMINOETHANOL	102-81-8	14	-----	-----	14	------	------	N	--	Y
DIBUTYL PHENYL PHOSPHATE	2528-78-7	------	------	------	3.5	------	------	N	--	Y
DIBUTYL PHOSPHATE	107-66-4	5	10	-----	8.6	17	------	N	--	N
DIBUTYL PHTHALATE	84-74-2	5	-----	-----	5	------	------	N	--	N
DICHLOROACETYLENE	7572-29-4	-----	-----	0.4	------	------	0.39	N	--	N
o-DICHLOROBENZENE	95-50-1	-----	-----	300	150	------	301	N	--	N
p-DICHLOROBENZENE	106-46-7	450	675	-----	60	------	------	N	A3	N
3,3'-DICHLOROBENZIDINE	91-94-1	-----	-----	-----	------	------	------	N	A2	Y
1,4-DICHLORO-2-BUTENE	764-41-0	------	------	------	0.025	------	------	N	A2	Y
DICHLORODIFLUOROMETHANE	75-71-8	4950	-----	-----	4950	------	------	N	--	N
1,3-DICHLORO-5,5-DIMETHYL HYDANTOIN	118-52-5	0.2	0.4	-----	0.2	0.4	------	N	--	N
1,1-DICHLOROETHANE	75-34-3	400	-----	-----	405	------	------	N	--	N
1,2-DICHLOROETHYLENE	540-59-0	790	-----	-----	793	------	------	N	--	N
DICHLOROETHYL ETHER	111-44-4	30	60	-----	29	58	------	N	--	Y
DICHLOROFLUOROMETHANE	75-43-4	40	-----	-----	42	------	------	N	--	N
1,1-DICHLORO-1-NITROETHANE	594-72-9	10	-----	-----	12	------	------	N	--	N
1,3-DICHLOROPROPENE	542-75-6	5	-----	-----	4.5	------	------	N	--	Y
2,2-DICHLOROPROPIONIC ACID	75-99-0	6	-----	-----	5.8	------	------	N	--	N
DICHLOROTETRAFLUOROETHANE	76-14-2	7000	-----	-----	6990	------	------	N	--	N
DICROTOPHOS	141-66-2	0.25	-----	-----	0.25	------	------	N	--	Y
DICYCLOPENTADIENE	77-73-6	30	-----	-----	27	------	------	N	--	N
DICYCLOPENTADIENYL IRON, RESPIRABLE	102-54-5A	5	-----	-----	------	------	------	N	--	N
DICYCLOPENTADIENYL IRON, TOTAL DUST	102-54-5B	10	-----	-----	10	------	------	N	--	N
DIELDRIN	60-57-1	0.25	-----	-----	0.25	------	------	N	--	Y
DIETHANOLAMINE	111-42-2	15	-----	-----	13	------	------	N	--	N
DIETHYLAMINE	109-89-7	30	75	-----	15	45	------	N	--	Y
2-DIETHYLAMINOETHANOL	100-37-8	50	-----	-----	48	------	------	Y	--	Y
DIETHYLENE GLYCOL MONOETHYL ETHER	111-90-0	-----	-----	-----	------	------	------	N	--	N
DIETHYLENE GLYCOL MONOMETHYL ETHER	111-77-3	-----	-----	-----	------	------	------	N	--	N
DIETHYLENE TRIAMINE	111-40-0	4	-----	-----	4.2	------	------	N	--	Y
DIETHYL KETONE	96-22-0	705	-----	-----	705	------	------	N	--	N
DIETHYL PHTHALATE	84-66-2	5	-----	-----	5	------	------	N	--	N
DIFLUORODIBROMOMETHANE	75-61-6	860	-----	-----	858	------	------	N	--	N
DIGLYCIDYL ETHER (DGE)	2238-07-5	0.5	-----	-----	0.53	------	------	N	--	N
DIISOBUTYL KETONE	108-83-8	150	-----	-----	145	------	------	N	--	N
DIISOPROPYLAMINE	108-18-9	20	-----	-----	21	------	------	N	--	Y
DIMETHYL ACETAMIDE	127-19-5	35	-----	-----	36	------	------	Y	--	Y
DIMETHYLAMINE	124-40-3	18	-----	-----	9.2	27.6	------	N	--	N
DIMETHYLANILINE (N,N-DIMETHYLANILINE)	121-69-7	25	50	-----	25	50	------	Y	--	Y
DIMETHYL CARBAMOYL CHLORIDE	79-44-7	-----	-----	-----	------	------	------	N	A2	N
DIMETHYLFORMAMIDE	68-12-2	30	-----	-----	30	------	------	Y	--	Y
1,1-DIMETHYLHYDRAZINE	57-14-7	1	-----	-----	1.2	------	------	Y	A2	Y
DIMETHYLPHTHALATE	131-11-3	5	-----	-----	5	------	------	N	--	N
DIMETHYL SULFATE	77-78-1	0.5	-----	-----	0.52	------	------	Y	A2	Y
DINITOLMIDE	148-01-6	5	-----	-----	5	------	------	N	--	N
DINITROBENZENE	528-29-0	1	-----	-----	1.0	------	------	Y	--	Y
DINITROBENZENE	99-65-0	1	-----	-----	1.0	------	------	Y	--	Y
DINITROBENZENE	100-25-4	1	-----	-----	1.0	------	------	Y	--	Y
DINITRO-O-CRESOL	534-52-1	0.2	-----	-----	0.2	------	------	Y	--	Y
DINITROTOLUENE	25321-14-6	1.5	-----	-----	0.15	------	------	Y	A2	Y
DIOXANE (DIETHYLENE DIOXIDE)	123-91-1	90	-----	-----	90	------	------	Y	--	Y
DIOXATHION	78-34-2	0.2	-----	-----	0.2	------	------	N	--	Y
DIPHENYLAMINE	122-39-4	10	-----	-----	10	------	------	N	--	N
DIPROPYLENE GLYCOL METHYL ETHER	34590-94-8	600	900	-----	606	909	------	Y	--	N
DIPROPYL KETONE	123-19-3	235	-----	-----	233	------	------	N	--	N
DIQUAT, TOTAL AEROSOL	85-00-7	0.5	-----	-----	0.5	------	------	N	--	Y
DIQUAT, RESPIRABLE	231-36-7A	------	------	------	0.1	------	------	N	--	Y
Di-sec-OCTYL PHTHALATE	117-81-7	5	10	-----	5	10	------	N	--	N

DISULFIRAM	97-77-8	2	-----	-----	2	------	------	N	--	N
DISULFOTON	298-04-4	0.1	-----	-----	0.1	------	------	N	--	N
2,6-DI-TERT-BUTYL-p-CRESOL	128-37-0	10	-----	-----	10	------	------	N	--	N
DIURON	330-54-1	10	-----	-----	10	------	------	N	--	N
DIVINYL BENZENE	1321-74-0	50	-----	-----	53	------	------	N	--	N
EMERY, RESPIRABLE FRACTION	112-62-9A	5	-----	-----	------	------	------	N	--	N
EMERY, TOTAL DUST	112-62-9B	10	-----	-----	10	------	------	N	--	N
ENDOSULFAN	115-29-7	0.1	-----	-----	0.1	------	------	N	--	Y
ENDRIN	72-20-8	0.1	-----	-----	0.1	------	------	Y	--	Y
ENFLURANE	13838-16-9	-----	-----	-----	566	------	------	N	--	N
EPICHLOROHYDRIN	106-89-8	8	-----	-----	7.6	------	------	Y	--	Y
EPN	2104-64-5	0.5	-----	-----	0.5	------	------	Y	--	Y
ETHANE	74-84-0	-----	-----	-----	------	------	------	N	--	N
ETHANOLAMINE	141-43-5	8	15	-----	7.5	15	------	N	--	N
ETHION	563-12-2	0.4	-----	-----	0.4	------	------	N	--	Y
2-ETHOXYETHANOL	110-80-5	740	-----	-----	18	------	------	Y	--	Y
2-ETHOXYETHYL ACETATE	111-15-9	540	-----	-----	27	------	------	Y	--	Y
ETHYL ACETATE	141-78-6	1400	-----	-----	1440	------	------	N	--	N
ETHYL ACRYLATE	140-88-5	20	100	-----	20	61	------	Y	A2	N
ETHYL ALCOHOL	64-17-5	1900	-----	-----	1880	------	------	N	--	N
ETHYLAMINE	75-04-7	18	-----	-----	9.2	27.6	------	N	--	N
ETHYL AMYL KETONE	541-85-5	130	-----	-----	131	------	------	N	--	N
ETHYL BENZENE	100-41-4	435	545	-----	434	543	------	N	--	N
ETHYL BROMIDE	74-96-4	890	1110	-----	22	------	------	N	A2	Y
ETHYL BUTYL KETONE	106-35-4	230	-----	-----	234	------	------	N	--	N
ETHYL CHLORIDE	75-00-3	2600	-----	-----	2640	------	------	N	--	N
ETHYLENE	74-85-1	-----	-----	-----	------	------	------	N	E	N
ETHYLENE CHLOROHYDRIN	107-07-3	-----	-----	3	------	------	3.3	Y	--	N
ETHYLENEDIAMINE	107-15-3	25	-----	-----	25	------	------	N	--	Y
ETHYLENE DIBROMIDE	106-93-4	154	-----	230	------	------	------	N	A2	Y
ETHYLENE DICHLORIDE	107-06-2	4	8	-----	40	------	------	N	--	N
ETHYLENE GLYCOL VAPOR	107-21-1	-----	-----	125	------	------	127	N	--	N
ETHYLENE GLYCOL DIMETHYL ETHER	110-71-4	-----	-----	-----	------	------	------	N	--	N
ETHYLENE GLYCOL DINITRATE	628-96-6	-----	0.1	-----	0.31	------	------	N	--	Y
ETHYLENE OXIDE	75-21-8	1.8	9	-----	1.8	------	------	N	A2	N
ETHYLENIMINE	151-56-4	1	-----	-----	0.88	------	------	Y	--	Y
ETHYL ETHER	60-29-7	1200	1500	-----	1210	1520	------	N	--	N
ETHYL FORMATE	109-94-4	300	-----	-----	303	------	------	N	--	N
ETHYLIDENE NORBORNENE	16219-75-3	-----	-----	25	------	------	25	N	--	N
ETHYL MERCAPTAN	75-08-1	1	-----	-----	1.3	------	------	N	--	N
N-ETHYLMORPHOLINE	100-74-3	23	-----	-----	24	------	------	Y	--	Y
ETHYL SILICATE	78-10-4	85	-----	-----	85	------	------	N	--	N
FENAMIPHOS	22224-92-6	0.1	-----	-----	0.1	------	------	N	--	Y
FENSULFOTHION	115-90-2	0.1	-----	-----	0.1	------	------	N	--	N
FENTHION	55-38-9	0.2	-----	-----	0.2	------	------	N	--	Y
FERBAM, RESPIRABLE FRACTION	14484-64-1A	5	-----	-----	------	------	------	N	--	N
FERBAM, TOTAL DUST	14484-64-1B	10	-----	-----	10	------	------	N	--	N
FERROVANADIUM DUST	12604-58-9	1	3	-----	1	3	------	N	--	N
FIBROUS GLASS DUST	FIBER GLASS	-----	-----	-----	10	------	------	N	--	N

Stressor Name	Cas Number	OSHA 8-HR TWA	OSHA STEL	OSHA CEILING	ACGIH 8-HR TWA	ACGIH STEL	ACGIH CEILING	OSHA SKIN	APPX	ACGIH SKIN
FLUORIDES (As F)	FLUORIDES	2.5	-----	-----	2.5	------	------	N	--	N
FLUORINE (As F)	7782-41-4	0.2	-----	-----	1.6	3.1	------	N	--	N
FONOFOS	944-22-9	0.1	-----	-----	0.1	------	------	N	--	Y
FORMALDEHYDE	50-00-0	0.92	2.5	------	------	------	0.37	N	A2	N
FORMAMIDE	75-12-7	30	45	-----	18	------	------	N	--	Y
FORMIC ACID	64-18-6	9	-----	-----	9.4	19	------	N	--	N
FURFURAL	98-01-1	8	-----	-----	7.9	------	------	Y	--	Y
FURFURYL ALCOHOL	98-00-0	40	60	-----	40	60	------	N	--	Y
GASOLINE	8006-61-9	900	1500	-----	890	1480	------	N	--	N
GERMANIUM TETRAHYDRIDE	7782-65-2	0.6	-----	-----	0.63	------	------	N	--	N
GLUTARALDEHYDE	111-30-8	-----	-----	0.8	------	------	0.82	N	--	N
GLYCERIN MIST, RESPIRABLE	56-81-5A	5	-----	-----	------	------	------	N	--	N
GLYCERIN MIST, TOTAL	56-81-5B	10	-----	-----	10	------	------	N	--	N
GLYCIDOL	556-52-5	75	-----	-----	76	------	------	N	--	N
GLYPHOSATE ISOPROPYLAMINE SALT (ROUNDUP)	38641-94-0	------	------	------	------	------	------	N	--	N
GRAIN DUST (OAT, WHEAT, BARLEY)	GRAIN DUST	10	-----	-----	4	------	------	N	--	N
GRAPHITE (NATURAL), RESPIRABLE DUST	7782-42-5A	2.5	-----	-----	2	------	------	N	--	N
GRAPHITE (SYNTHETIC), RESPIRABLE DUST	7782-42-5B	5	------	------	2	------	------	N	D	N
GRAPHITE (SYNTHETIC), TOTAL DUST	7782-42-5C	10	-----	-----	------	------	------	N	--	N
GRAPHITE (SYNTHETIC), FIBERS/CC	7782-42-5D	2	------	------	------	------	------	N	--	N
HAFNIUM	7440-58-6	0.5	-----	-----	0.5	------	------	N	--	N
HALOTHANE	151-67-7	-----	-----	-----	404	------	------	N	--	N
HELIUM	7440-59-7	-----	-----	-----	------	------	------	N	--	N
HEPTACHLOR	76-44-8	0.5	-----	-----	0.5	------	------	Y	--	Y
HEPTACHLOR EPOXIDE	1024-57-3	-----	-----	-----	0.05	------	------	N	A3	Y
N-HEPTANE	142-82-5	1600	2000	-----	1640	2050	------	N	--	N
HEXACHLOROBUTADIENE	87-68-3	0.24	-----	-----	0.21	------	------	N	A2	Y
HEXACHLOROCYCLOPENTADIENE	77-47-4	0.1	-----	-----	0.11	------	------	N	--	N
HEXACHLOROETHANE	67-72-1	10	-----	-----	9.7	------	------	Y	A2	N
HEXACHLORONAPHTHALENE	1335-87-1	0.2	-----	-----	0.2	------	------	Y	--	Y
HEXAFLUOROACETONE	684-16-2	0.7	-----	-----	0.68	------	------	N	--	Y
HEXAMETHYL PHOSPHORAMIDE	680-31-9	-----	-----	-----	------	------	------	N	A2	Y
1,6-HEXANEDIAMINE	124-09-4	------	------	------	2.3	------	------	N	--	N
HEXAMETHYLENE DIISOCYANATE (HDI)	822-06-0A	-----	-----	-----	0.034	------	------	N	--	N
HEXAMETHYLENE DIISOCYANATE BIURET (HDIB)	822-06-0B	0.1	0.4	------	------	------	------	N	--	N
HEXANE (N-HEXANE)	110-54-3A	180	-----	-----	176	------	------	N	--	N
HEXANE (OTHER ISOMERS)	110-54-3B	1800	-----	-----	1760	3500	------	N	--	N
sec-HEXYL ACETATE	108-84-9	300	-----	-----	295	------	------	N	--	N
HEXYLENE GLYCOL	107-41-5	-----	-----	125	------	------	121	N	--	N
HYDRAZINE	302-01-2	0.1	-----	-----	0.13	------	------	Y	A2	Y
HYDROCARBONS CONDENSED (BREATHING AIR)	HYDRO	------	------	------	------	------	------	N	--	N
HYDROGEN	1333-74-0	-----	-----	-----	------	------	------	N	--	N

HYDROGENATED TERPHENYLS	61788-32-7	5	-----	-----	4.9	------	------	N	--	N
HYDROGEN BROMIDE	10035-10-6	-----	-----	10	------	------	9.9	N	--	N
HYDROGEN CHLORIDE	7647-01-0	-----	-----	7	------	------	7.5	N	--	N
HYDROGEN FLUORIDE (As F)	7664-39-3	2.5	5	-----	------	------	2.6	N	--	N
HYDROGEN PEROXIDE	17722-84-1	1.4	------	------	1.4	------	------	N	--	N
HYDROGEN SELENIDE (As Se)	7783-07-5	0.2	-----	-----	0.16	------	------	N	--	N
HYDROGEN SULFIDE	7783-06-4	14	21	-----	14	21	------	N	--	N
HYDROQUINONE	123-31-9	2	-----	-----	2	------	------	N	--	N
2-HYDROXYPROPYL ACRYLATE	999-61-1	3	-----	-----	2.8	------	------	N	--	Y
INDENE	95-13-6	45	-----	-----	48	------	------	N	--	N
INDIUM AND COMPOUNDS (As In)	7440-74-6	0.1	-----	-----	0.1	------	------	N	--	N
IODINE	7553-56-2	-----	-----	1	------	------	1.0	N	--	N
IODOFORM	75-47-8	10	-----	-----	10	------	------	N	--	N
IRON OXIDE DUST AND FUME (As Fe2O3)	1309-37-1A	10	-----	-----	------	------	------	N	--	N
IRON OXIDE DUST AND FUME (As Fe)	1309-37-1B	10	-----	-----	5	------	------	N	B2	N
IRON PENTACARBONYL (As Fe)	13463-40-6A	0.8	1.6	-----	0.23	0.45	------	N	--	N
IRON SALTS, SOLUBLE (As Fe)	13463-40-6B	1	-----	-----	1	------	------	N	--	N
ISOAMYL ACETATE	123-92-2	525	-----	-----	532	------	------	N	--	N
ISOAMYL ALCOHOL	123-51-3	360	450	-----	361	452	------	N	--	N
ISOBUTYL ACETATE	110-19-0	700	-----	-----	713	------	------	N	--	N
ISOBUTYL ALCOHOL	78-83-1	150	-----	-----	152	------	------	N	--	N
ISOOCTANE	26635-64-3	-----	-----	-----	------	------	------	N	--	N
ISOOCTYL ALCOHOL	26952-21-6	270	-----	-----	266	------	------	N	--	Y
ISOPHORONE	78-59-1	23	-----	-----	------	------	28	N	--	N
ISOPHORONE DIISOCYANATE	4098-71-9	0.045	0.18	-----	0.045	------	------	N	--	Y
ISOPROPOXYETHANOL	109-59-1	105	-----	-----	106	------	------	N	--	N
ISOPROPYL ACETATE	108-21-4	950	1185	-----	1040	1290	------	N	--	N
ISOPROPYL ALCOHOL	67-63-0	980	1225	-----	983	1230	------	N	--	N
ISOPROPYLAMINE	75-31-0	12	24	-----	12	24	------	N	--	N
N-ISOPROPYLANILINE	768-52-5	10	-----	-----	11	------	------	N	--	Y
ISOPROPYL ETHER	108-20-3	2100	-----	-----	1040	1300	------	N	--	N
ISOPROPYL GLYCIDYL ETHER (IGE)	4016-14-2	240	360	-----	238	356	------	N	--	N
JP-4	JP-4	525	-----	-----	------	------	------	N	--	N
JP-5	JP-5	350	-----	-----	------	------	------	N	--	N
KAOLIN, RESPIRABLE DUST	KAOLIN-A	5	-----	-----	2	------	------	N	--	N
KAOLIN, TOTAL DUST	KAOLIN-B	10	-----	-----	------	------	------	N	--	N
KEROSENE	KEROSENE	525	-----	-----	------	------	------	N	--	N
KETENE	463-51-4	0.9	3	-----	0.86	2.6	------	N	--	N
LEAD	7439-92-1	0.05	-----	-----	0.15	------	------	N	--	N
LEAD ARSENATE	3687-31-8	-----	-----	-----	0.15	------	------	N	--	N
LEAD CHROMATE (As Cr)	7758-97-6	------	------	------	0.012	------	------	N	A2	N
LEAD CHROMATE (As Pb)	7758-97-6A	-----	-----	-----	0.05	------	------	N	A2	N
LINDANE	58-89-9	0.5	-----	-----	0.5	------	------	Y	--	Y
LITHIUM HYDRIDE	7580-67-8	0.025	-----	-----	0.025	------	------	N	--	N
L.P.G. (LIQUIFIED PETROLEUM GAS)	68476-85-7	1800	-----	-----	1800	------	------	N	--	N
MAGNESITE, RESPIRABLE DUST	546-93-0A	5	-----	-----	------	------	------	N	--	N
MAGNESITE, TOTAL DUST	546-93-0B	15	-----	-----	10	------	------	N	--	N
MAGNESIUM OXIDE FUME,RESPIRABLE (As MgO)	1309-48-4A	5	-----	-----	------	------	------	N	--	N
MAGNESIUM OXIDE FUME,TOTAL DUST (As MgO)	1309-48-4B	10	-----	-----	10	------	------	N	--	N
MALATHION, RESPIRABLE FRACTION	121-75-5A	5	-----	-----	------	------	------	N	--	N
MALATHION, TOTAL DUST	121-75-5B	10	-----	-----	10	------	------	Y	--	Y
MALEIC ANHYDRIDE	108-31-6	1	-----	-----	1.0	------	------	N	--	N
MANGANESE DUST AND COMPOUNDS (As Mn)	7439-96-5A	-----	-----	5	5	------	------	N	--	N
MANGANESE FUME (As Mn)	7439-96-5B	1	3	-----	1	3	------	N	--	N
MANGANESE CYCLOPENTADIENYL TRICARBONYL	12079-65-1	0.1	-----	-----	0.1	------	------	N	--	Y
MANGANESE TETROXIDE (As Mn)	1317-35-7	1	-----	-----	------	------	------	N	--	N
MARBLE, RESPIRABLE FRACTION	1317-65-3A	5	-----	-----	------	------	------	N	--	N
MARBLE, TOTAL DUST	1317-65-3	15	-----	-----	10	------	------	N	--	N
MERCURY ALKYL COMPOUNDS (As Hg)	7439-97-6A	0.01	0.03	-----	0.01	0.03	------	N	--	Y
MERCURY VAPOR (As Hg)	7439-97-6B	0.05	-----	-----	0.05	------	------	N	--	Y
MERCURY ARYL AND INORGANIC (As Hg)	7439-97-6C	-----	-----	0.1	0.1	------	------	N	--	Y
MESITYL OXIDE	141-79-7	60	100	-----	60	100	------	N	--	N
METHACRYLIC ACID	79-41-4	70	-----	-----	70	------	------	N	--	N
METHANE	74-82-8	-----	-----	-----	------	------	------	N	--	N
METHOMYL	16752-77-5	2.5	-----	-----	2.5	------	------	N	--	N
METHOXYCHLOR, RESPIRABLE FRACTION	72-43-5A	5	-----	-----	------	------	------	N	--	N

Stressor Name	Cas Number	OSHA 8-HR TWA	OSHA STEL	OSHA CEILING	ACGIH 8-HR TWA	ACGIH STEL	ACGIH CEILING	OSHA SKIN	APPX	ACGIH SKIN
METHOXYCHLOR, TOTAL DUST	72-43-5B	10	-----	-----	10	------	------	N	--	N
2-METHOXYETHANOL (METHYL CELLOSOLVE)	109-86-4	80	-----	-----	16	------	------	Y	--	Y
2-METHOXYETHYL ACETATE	110-49-6	120	-----	-----	24	------	------	Y	--	Y
4-METHOXYPHENOL	150-76-5	5	-----	-----	5	------	------	N	--	N
METHYL ACETATE	79-20-9	610	760	-----	606	757	------	N	--	N
METHYL ACETYLENE (PROPYNE)	74-99-7A	1650	-----	-----	1640	------	------	N	--	N
METHYL ACETYLENE-PROPADIENE MIXTURE/MAPP	74-99-7B	1800	2250	-----	1640	2050	------	N	--	N
METHYL ACRYLATE	96-33-3	35	-----	-----	35	------	------	Y	--	Y
METHYLACRYLONITRILE	126-98-7	3	-----	-----	2.7	------	------	N	--	Y
METHYLAL (DIMETHOXYMETHANE)	109-87-5	3100	-----	-----	3110	------	------	N	--	N
METHYL ALCOHOL	67-56-1	260	310	-----	262	328	------	N	--	Y
METHYLAMINE	74-89-5	12	-----	-----	6.4	19	------	N	--	N
METHYL N-AMYL KETONE	110-43-0	465	-----	-----	233	------	------	N	--	N
N-METHYL ANILINE (MONOMETHYL ANILINE)	100-61-8	9	-----	-----	2.2	------	------	Y	--	Y
METHYL BROMIDE	74-83-9	20	-----	-----	19	------	------	N	--	Y
METHYL-TERT BUTYL ETHER	1634-04-4	-----	-----	-----	144	------	------	N	--	N
METHYL n-BUTYL KETONE (2-HEXANONE)	591-78-6	20	-----	-----	20	------	------	N	--	N
METHYL CHLORIDE	74-87-3	105	210	-----	103	207	------	N	--	N
METHYL CHLOROFORM	71-55-6	1900	2450	-----	1910	2460	------	N	--	N
METHYL 2-CYANOACRYLATE	137-05-3	8	16	-----	9.1	18	------	N	--	N
METHYLCYCLOHEXANE	108-87-2	1600	-----	-----	1610	------	------	N	--	N
METHYLCYCLOHEXANOL	25639-42-3	235	-----	-----	234	------	------	N	--	N
o-METHYLCYCLOHEXANONE	583-60-8	230	345	-----	229	344	------	N	--	Y
2-METHYLCYCLOPENTADIENYL Mn TRICARBONYL	12108-13-3	0.2	-----	-----	0.2	------	------	N	--	Y
METHYL DEMETON	8022-00-2	0.5	-----	-----	0.5	------	------	N	--	Y

METHYLENE BISPHENYL ISOCYANATE (MDI)	101-68-8	------	-----	0.2	0.051	------	------	N	--	N
METHYLENE CHLORIDE	75-09-2	------	-----	3500	174	------	------	N	A2	N
4,4'-METHYLENE bis(2-CHLOROANILINE)/MOCA	101-14-4	0.22	-----	-----	0.11	------	------	N	A2	Y
METHYLENE BIS (4-CYCLO-HEXYLISOCYANATE)	5124-30-1	-----	-----	0.11	0.054	------	------	N	--	N
4,4'-METHYLENE DIANILINE	101-77-9	-----	-----	-----	0.81	------	------	N	A2	Y
METHYL ETHYL KETONE (2-BUTANONE)	78-93-3	590	885	-----	590	885	------	N	--	N
METHYL ETHYL KETONE PEROXIDE (MEKP)	1338-23-4	-----	-----	5	------	------	1.5	N	--	N
METHYL FORMATE	107-31-3	250	375	-----	246	368	------	N	--	N
METHYL HYDRAZINE	60-34-4	-----	-----	0.35	------	------	0.38	N	A2	Y
METHYL IODIDE	74-88-4	10	-----	-----	12	------	------	Y	A2	Y
METHYL ISOAMYL KETONE	110-12-3	240	-----	-----	234	------	------	N	--	N
METHYL ISOBUTYL CARBINOL	108-11-2	100	165	-----	104	166	------	Y	--	Y
METHYL ISOBUTYL KETONE (HEXONE)	108-10-1	205	300	-----	205	308	------	N	--	N
METHYL ISOCYANATE	624-83-9	0.05	-----	-----	0.047	------	------	Y	--	Y
METHYL ISOPROPYL KETONE	563-80-4	705	-----	-----	705	------	------	N	--	N
METHYL MERCAPTAN	74-93-1	1	-----	-----	0.98	------	------	N	--	N
METHYL METHACRYLATE	80-62-6	410	-----	-----	410	------	------	N	--	N
METHYL PARATHION	298-00-0	0.2	-----	-----	0.2	------	------	N	--	Y
METHYL PROPYL KETONE (2-PENTANONE)	107-87-9	700	875	-----	705	881	------	N	--	N
METHYL SILICATE	681-84-5	6	-----	-----	6.0	------	------	N	--	N
a-METHYL STYRENE	98-83-9	240	485	-----	242	483	------	N	--	N
METRIBUZIN	21087-64-9	5	-----	-----	5	------	------	N	--	N
MEVINPHOS	7786-34-7	----	-----	-----	0.09	0.27	------	N	--	Y
MINERAL WOOL FIBER	MINERAL WOOL	-----	-----	-----	10	------	------	N	--	N
MOLYBDENUM SOLUBLE COMPOUNDS (As Mo)	7439-98-7A	5	-----	-----	5	------	------	N	--	N
MOLYBDENUM INSOLUBLE, RESPIRABLE (As Mo)	7439-98-7A	5	-----	-----	------	------	------	N	--	N
MOLYBDENUM INSOLUBLE, TOTAL DUST (As Mo)	7439-98-7B	10	-----	-----	10	------	------	N	--	N
MONOCROTOPHOS	6923-22-4	0.25	-----	-----	0.25	------	------	N	--	Y
MORPHOLINE	110-91-8	70	105	-----	71	------	------	Y	--	Y
NALED,(DIMETHYL-DIBROMO-DICHLOROETHYL-P)	300-76-5	3	-----	-----	3	------	------	Y	--	Y
NAPTHA (COAL TAR)	8030-30-6	400	-----	-----	------	------	------	N	--	N
NAPHTHALENE	91-20-3	50	75	-----	52	79	------	N	--	N
B-NAPHTHYLAMINE	91-59-8	-----	-----	-----	------	------	------	N	A1	N
NEON	7440-01-9	-----	-----	-----	------	------	------	N	--	N
NICKEL METAL AND INSOLUBLE COMPOUNDS	7440-02-0A	1	-----	-----	1	------	------	N	--	N
NICKEL SOLUBLE COMPOUNDS (As Ni)	7440-02-0B	0.1	-----	-----	0.1	------	------	N	--	N
NICKEL CARBONYL (As Ni)	13463-39-3	0.007	-----	-----	0.12	------	------	N	--	N
NICKEL SULFIDE ROASTING (As Ni)	7440-02-0C	-----	-----	-----	1	------	------	N	A1	N
NICOTINE	54-11-5	0.5	-----	-----	0.5	------	------	Y	--	Y
NITRAPYRIN	1929-82-4	-----	-----	-----	10	20	------	N	--	N
NITRIC ACID	7697-37-2	5	10	-----	5.2	10	------	N	--	N
NITRIC OXIDE	10102-43-9	30	-----	-----	31	------	------	N	--	N
p-NITROANILINE	100-01-6	3	-----	-----	3	------	------	Y	--	Y
NITROBENZENE	98-95-3	5	-----	-----	5.0	------	------	Y	--	Y
p-NITROCHLORBENZENE	100-00-5	1	-----	-----	0.64	------	------	Y	--	Y
4-NITRODIPHENYL	92-93-3	-----	-----	-----	------	------	------	N	A1	N
NITROETHANE	79-24-3	310	-----	-----	307	------	------	N	--	N
NITROGEN	7727-37-9	------	------	------	------	------	------	N	--	N
NITROGEN	7727-37-9	------	------	------	------	------	------	N	--	N
NITROGEN DIOXIDE	10102-44-0	-----	1.8	-----	5.6	9.4	------	N	--	N
NITROGEN TRIFLUORIDE	7783-54-2	29	-----	-----	29	------	------	N	--	N
NITROGLYCERIN (NG)	55-63-0	-----	0.1	-----	0.46	------	------	Y	--	N
NITROMETHANE	75-52-5	250	-----	-----	250	------	------	N	--	N
1-NITROPROPANE	108-03-2	90	-----	-----	91	------	------	N	--	N
2-NITROPROPANE	79-46-9	35	-----	-----	36	------	------	N	A2	N
N-NITROSODIMETHYLAMINE	62-75-9	-----	-----	-----	------	------	------	N	A2	Y
p-NITROTOLUENE	99-99-0	11	-----	-----	11	------	------	Y	--	Y
o-NITROTOLUENE	88-72-2	11	-----	-----	11	------	------	Y	--	Y
m-NITROTOLUENE	99-08-1	11	-----	-----	11	------	------	Y	--	Y
NITROUS OXIDE	1028-97-2	------	------	------	90	------	------	N	--	N
NONANE	111-84-2	1050	-----	-----	1050	------	------	N	--	N
NUISANCE PARTICULATES, RESPIRABLE	RESP	5	-----	-----	------	------	------	N	--	N
NUISANCE PARTICULATES, TOTAL DUST	TOTAL DUST	15	-----	-----	10	------	------	N	--	N
OCTACHLORONAPHTHALENE	2234-13-1	0.1	0.3	-----	0.1	0.3	------	Y	--	Y
OCTANE	111-65-9	1450	1800	-----	1400	1750	------	N	--	N
OIL MIST, MINERAL	8012-95-1	5	-----	-----	5	10	------	N	--	N
OSMIUM TETROXIDE (As Os)	20816-12-0	0.002	0.006	-----	0.0016	0.0047	------	N	--	N
OXALIC ACID	144-62-7	1	2	-----	1	2	------	N	--	N
OXYGEN % (BREATHING AIR)	7782-44-7	------	------	------	------	------	------	N	--	N
OXYGEN DIFLUORIDE	7783-41-7	-----	-----	0.1	------	------	0.11	N	--	N
OZONE	10028-15-6	0.2	0.6	-----	------	------	0.20	N	--	N
PARAFFIN WAX FUME	8002-74-2	2	-----	-----	2	------	------	N	--	N
PARAQUAT, RESPIRABLE	4685-14-7	0.1	-----	-----	0.1	------	------	Y	--	N
PARAQUAT, TOTAL DUST	4685-14-7A	------	------	------	0.5---	------	------	Y	--	N
PARATHION	56-38-2	0.1	-----	-----	0.1	------	------	Y	--	Y
PENTABORANE	19624-22-7	0.01	0.03	-----	0.013	0.039	------	N	--	N
PENTACHLORONAPHTHALENE	1321-64-8	0.5	-----	-----	0.5	------	------	Y	--	Y
PENTACHLORONITROBENZENE	82-68-8	------	------	------	0.5	------	------	N	--	N
PENTACHLOROPHENOL	87-86-5	0.5	-----	-----	0.5	------	------	Y	--	Y
PENTAERYTHRITOL, RESPIRABLE FRACTION	115-77-5A	5	-----	-----	------	------	------	N	--	N
PENTAERYTHRITOL, TOTAL DUST	115-77-5B	10	-----	-----	10	------	------	N	--	N
PENTANE	109-66-0	1800	2250	-----	1770	2210	------	N	--	N
PERCHLOROETHYLENE	127-18-4	170	-----	-----	170	685	------	N	A3	N

Stressor Name	Cas Number	OSHA 8-HR TWA	OSHA STEL	OSHA CEILING	ACGIH 8-HR TWA	ACGIH STEL	ACGIH CEILING	OSHA SKIN	APPX	ACGIH SKIN
PERCHLOROMETHYL MERCAPTAN	594-42-3	0.8	-----	-----	0.76	------	------	N	--	N
PERCHLORYL FLUORIDE	7616-94-6	14	28	-----	13	25	------	N	--	N
PERFLUOROISOBUTYLENE	382-21-8	------	------	------	------	------	0.082	N	--	N
PERLITE, RESPIRABLE FRACTION	PERLITE-A	5	-----	-----	------	------	------	N	--	N
PERLITE, TOTAL DUST	PERLITE-B	15	-----	-----	10	------	------	N	--	N
PETROLEUM DISTILLATES (NAPTHA)	8002-05-9	1600	-----	-----	------	------	------	N	--	N
PETROLEUM ETHER	PET ETHER	1600	-----	-----	------	------	------	N	--	N
PHENOL	108-95-2	19	-----	-----	19	------	------	Y	--	Y

PHENOTHIAZINE	92-84-2	5	-----	-----	5	------	------	N	--	Y
n-PHENYL-BETA-NAPHTHYLAMINE	135-88-6	-----	-----	-----	------	------	------	N	A2	N
o-PHENYLENEDIAMINE	95-54-5	------	------	------	0.1	------	------	N	A2	N
m-PHENYLENEDIAMINE	108-45-2	------	------	------	0.1	------	------	N	--	N
p-PHENYLENEDIAMINE	106-50-3	0.1	-----	-----	0.1	------	------	Y	--	Y
PHENYL ETHER VAPOR	101-84-8	7	-----	-----	7.0	14	------	N	--	N
PHENYL ETHER-BIPHENYL MIXTURE	PHEN-BIPHEN	7	-----	-----	------	------	------	N	--	N
PHENYL GLYCIDYL ETHER (PGE)	122-60-1	6	-----	-----	6.1	------	------	N	--	N
PHENYLHYDRAZINE	100-63-0	20	45	------	0.44	------	------	Y	A2	Y
PHENYL MERCAPTAN	108-98-5	2	-----	-----	2.3	------	------	N	--	N
PHENYLPHOSPHINE	638-21-1	-----	-----	0.25	------	------	0.23	N	--	N
PHORATE	298-02-2	0.5	0.2	-----	0.05	0.2	------	N	--	Y
PHOSDRIN (MEVINPHOS)	7786-34-7	0.1	0.3	-----	0.09	0.27	------	Y	--	N
PHOSGENE	75-44-5	0.4	-----	-----	0.40	------	------	N	--	N
PHOSPHINE	7803-51-2	0.4	1	-----	0.42	1.4	------	N	--	N
PHOSPHORIC ACID	7664-38-2	1	3	-----	1	3	------	N	--	N
PHOSPHORUS (YELLOW)	7723-14-0	0.1	-----	-----	0.1	------	------	N	--	N
PHOSPHORUS OXYCHLORIDE	10025-87-3	0.6	-----	-----	0.63	------	------	N	--	N
PHOSPHORUS PENTACHLORIDE	10026-13-8	1	-----	-----	0.85	------	------	N	--	N
PHOSPHORUS PENTASULFIDE	1314-80-3	1	3	-----	1	3	------	N	--	N
PHOSPHORUS TRICHLORIDE	7719-12-2	1.5	3	-----	1.1	2.8	------	N	--	N
PHTHALIC ANHYDRIDE	85-44-9	6	-----	-----	6.1	------	------	N	--	N
m-PHTHALODINITRILE	626-17-5	5	-----	-----	5	------	------	N	--	N
PICLORAM, RESPIRABLE FRACTION	1918-02-1A	5	-----	-----	------	------	------	N	--	N
PICLORAM, TOTAL DUST	1918-02-1B	10	-----	-----	10	------	------	N	--	N
PICRIC ACID (2,4,6-TRINITROPHENOL)	88-89-1	0.1	-----	-----	0.1	------	------	N	--	N
PINDONE (2-PIVALYL-1,3-INDANDIONE)	83-26-1	0.1	-----	-----	0.1	------	------	N	--	N
PIPERAZINE DIHYDROCHLORIDE	142-64-3	5	-----	-----	5	------	------	N	--	N
PLASTER OF PARIS, RESPIRABLE FRACTION	7778-18-9C	5	-----	-----	------	------	------	N	--	N
PLASTER OF PARIS, TOTAL DUST	7778-18-9D	15	-----	-----	10	------	------	N	--	N
PLATINUM METAL (As Pt)	7440-06-4A	1	-----	-----	1	------	------	N	--	N
PLATINUM SOLUBLE SALTS (As Pt)	7440-06-4B	0.002	-----	-----	0.002	------	------	N	--	N
POLYTETRAFLUOROETHYLENE DECOMPOSITION	TEFLON	-----	-----	-----	------	------	------	N	B1	N
PORTLAND CEMENT, RESPIRABLE FRACTION	65997-15-1A	5	-----	-----	------	------	------	N	--	N
PORTLAND CEMENT, TOTAL DUST	65997-15-1B	10	-----	-----	10	------	------	N	--	N
POTASSIUM HYDROXIDE	1310-58-3	-----	-----	2	------	------	2	N	--	N
PROPANE	74-98-6	1800	-----	-----	------	------	------	N	D	N
PROPANE SULTONE	1120-71-4	-----	-----	-----	------	------	------	N	A2	N
PROPARGYL ALCOHOL	107-19-7	2	-----	-----	2.3	------	------	N	--	Y
B-PROPIOLACTONE	57-57-8	-----	-----	-----	1.5	------	------	N	A2	N
PROPIONIC ACID	79-09-4	30	-----	-----	30	------	------	N	--	N
PROPOXUR (BAYGON)	114-26-1	0.5	-----	-----	0.5	------	------	N	--	N
n-PROPYL ACETATE	109-60-4	840	1050	-----	835	1040	------	N	--	N
PROPYL ALCOHOL	71-23-8	500	625	-----	492	615	------	N	--	Y
PROPYLENE	115-07-1	-----	-----	-----	------	------	------	N	--	N
PROPYLENE DICHLORIDE	78-87-5	350	510	-----	347	508	------	N	--	N
PROPYLENE GLYCOL DINITRATE	6423-43-4	0.3	-----	-----	0.34	------	------	N	--	Y
PROPYLENE GLYCOL MONOMETHYL ETHER	107-98-2	360	540	-----	369	553	------	N	--	N
PROPYLENE IMINE	75-55-8	5	-----	-----	4.7	------	------	Y	A2	Y
PROPYLENE OXIDE	75-56-9	50	-----	-----	48	------	------	N	--	N
n-PROPYL NITRATE	627-13-4	105	170	-----	107	172	------	N	--	N
PYRETHRUM	8003-34-7	5	-----	-----	5	------	------	N	--	N
PYRID	PYRID	-----	-----	-----	------	------	------	N	--	N
PYRIDINE	110-86-1	15	-----	-----	16	------	------	N	--	N
QUINONE	106-51-4	0.4	-----	-----	0.44	------	------	N	--	N
RESORCINOL	108-46-3	45	90	-----	45	90	------	N	--	N
RHODIUM METAL AND INSOLUBLE COMPOUNDS	7440-16-6A	0.1	-----	-----	1	------	------	N	--	N
RHODIUM SOLUBLE COMPOUNDS (As Rh)	7440-16-6B	0.001	-----	-----	0.01	------	------	N	--	N
RONNEL	299-84-3	10	-----	-----	10	------	------	N	--	N
ROSIN CORE SOLDER PYRO PRODUCT (As HCHO)	50-00-0B	0.1	-----	-----	------	------	------	N	--	N
ROTENONE (COMMERCIAL)	83-79-4	5	-----	-----	5	------	------	N	--	N
ROUGE, RESPIRABLE FRACTION	ROUGE-A	5	-----	-----	------	------	------	N	--	N
ROUGE, TOTAL DUST	ROUGE-B	10	-----	-----	10	------	------	N	--	N
RUBBER SOLVENT (NAPHTHA)	NAPTHA (R)	-----	-----	-----	1590	------	------	N	--	N
SELENIUM COMPOUNDS (As Se)	7782-49-2	0.2	-----	-----	0.2	------	------	N	--	N
SELENIUM HEXAFLUORIDE (As Se)	7783-79-1	0.4	-----	-----	0.16	------	------	N	--	N
SESONE	136-78-7	-----	-----	-----	10	------	------	N	--	N
SILICA AMORPHOUS, <1% CRYSTALLINE SILICA	68855-54-9	6	-----	-----	10	------	------	N	--	N
SILICA CRISTOBALITE, RESPIRABLE (As Qtz)	14464-46-1	0.05	-----	-----	0.05	------	------	N	--	N
SILICA CRISTOBALITE, TOTAL DUST (As Qtz)	14464-46-1A	0.14	-----	-----	------	------	------	N	--	N
SILICA QUARTZ, RESPIRABLE (As Qtz)	14808-60-7	0.1	-----	-----	0.1	------	------	N	--	N
SILICA QUARTZ, TOTAL DUST (As Qtz)	14808-60-7A	0.29	-----	-----	------	------	------	N	--	N
SILICA FUME, (AMORPHOUS) RESPIRABLE	69012-64-2	------	------	------	2	------	------	N	--	N
SILICA FUSED, (AMORPHOUS) RESPIRABLE	60676-86-0	0.1	-----	-----	0.1	------	------	N	--	N
SILICA TRIDYMITE, RESPIRABLE (As Qtz)	15468-32-3	0.05	-----	-----	0.05	------	------	N	--	N
SILICA TRIPOLI, RESPIRABLE (As Qtz)	1317-95-9	0.1	-----	-----	0.1	------	------	N	--	N
SILICATES, MICA, RESPIRABLE FRACTION	12001-26-2	3	-----	-----	3	------	------	N	--	N
SILICATES, SOAPSTONE, RESPIRABLE	SOAP-A	3	-----	-----	3	------	------	N	--	N
SILICATES, SOAPSTONE, TOTAL DUST	SOAP-B	6	-----	-----	6	------	------	N	--	N
SILICATES, TALC (NO ASBESTOS) RESPIRABLE	14807-96-6	2	-----	-----	2	------	------	N	--	N
SILICON, RESPIRABLE FRACTION	7440-21-3A	5	-----	-----	------	------	------	N	--	N
SILICON, TOTAL DUST	7440-21-3B	10	-----	-----	10	------	------	N	--	N
SILICON CARBIDE, RESPIRABLE FRACTION	409-21-2A	5	-----	-----	------	------	------	N	--	N
SILICON CARBIDE, TOTAL DUST	409-21-2B	10	-----	-----	10	------	------	N	--	N
SILICON TETRAHYDRIDE	7803-62-5	7	-----	-----	6.6	------	------	N	--	N
SILVER METAL DUST AND FUME (As Ag)	7440-22-4A	0.01	-----	-----	0.1	------	------	N	--	N
SILVER SOLUBLE COMPOUNDS (As Ag)	7440-22-4B	-----	-----	-----	0.01	------	------	N	--	N
SODIUM AZIDE (As NaN3)	26628-22-8	-----	-----	0.3	------	------	0.29	N	--	N
SODIUM BISULFITE	7631-90-5	5	-----	-----	5	------	------	N	--	N
SODIUM FLUOROACETATE	62-74-8	0.05	0.15	----	0.05	0.15	------	Y	--	Y
SODIUM HYDROXIDE	1310-73-2	-----	-----	2	------	------	2	N	--	N
SODIUM METABISULFITE	7681-57-4	5	-----	-----	5	------	------	N	--	N
STARCH, RESPIRABLE FRACTION	9005-25-8A	5	-----	-----	------	------	------	N	--	N
STARCH, TOTAL DUST	9005-25-8B	15	-----	-----	10	------	------	N	D	N
STEARATES	STEARATES	-----	-----	-----	10	------	------	N	--	N
STIBINE	7803-52-3	0.5	-----	-----	0.51	------	------	N	--	N
STODDARD SOLVENT	8052-41-3	525	-----	-----	525	------	------	N	--	N

STRONTIUM	7440-24-6	------	------	------	------	------	------	N	--	N
STRONTIUM CHROMATE (As Cr)	7789-06-2	------	------	------	0.0005	------	------	N	A2	N
STRYCHNINE	57-24-9	0.15	-----	-----	0.15	------	------	N	--	N

Stressor Name	Cas Number	OSHA 8-HR TWA	OSHA STEL	OSHA CEILING	ACGIH 8-HR TWA	ACGIH STEL	ACGIH CEILING	OSHA SKIN	APPX	ACGIH SKIN
STYRENE, MONOMER	100-42-5	215	425	-----	213	426	------	N	--	N
SUBTILISINS (PROTEOLYTIC ENZYMES)(In ug)	1395-21-7	-----	-----	0.06	------	------	0.06	N	--	N
SUCROSE, RESPIRABLE FRACTION	57-50-1A	5	-----	-----	------	------	------	N	--	N
SUCROSE, TOTAL DUST	57-50-1B	15	-----	-----	10	------	------	N	D	N
SULFOMETURON METHYL	74222-97-2	-----	-----	-----	5	------	------	N	A4	N
SULFUR DIOXIDE	7446-09-5	5	10	-----	5.2	13	------	N	--	N
SULFUR HEXAFLUORIDE	2551-62-4	6000	-----	-----	5970	------	------	N	--	N
SULFURIC ACID	7664-93-9	1	-----	-----	1	3	------	N	--	N
SULFUR MONOCHLORIDE	10025-67-9	-----	-----	6	------	------	5.5	N	--	N
SULFUR PENTAFLUORIDE	5714-22-7	-----	-----	0.1	------	------	0.10	N	--	N
SULFUR TETRAFLUORIDE	7783-60-0	-----	-----	0.4	------	------	0.44	N	--	N
SULFURYL FLUORIDE	2699-79-8	20	40	-----	21	42	------	N	--	N
SULPROFOS	35400-43-2	1	-----	-----	1	------	------	N	--	N
2,4,5-T	93-76-5	10	-----	-----	10	------	------	N	--	N
TANTALUM	7440-25-7	5	-----	-----	5	------	------	N	--	N
TEDP (SULFOTEP)	3689-24-5	0.2	-----	-----	0.2	------	------	Y	--	Y
TELLURIUM AND COMPOUNDS (As Te)	13494-80-9	0.1	-----	-----	0.1	------	------	N	--	N
TELLURIUM HEXAFLUORIDE (As Te)	7783-80-4	0.2	-----	-----	0.10	------	------	N	--	N
TEMEPHOS, RESPIRABLE FRACTION	3383-96-8A	5	-----	-----	------	------	------	N	--	N
TEMEPHOS, TOTAL DUST	3383-96-8B	10	-----	-----	10	------	------	N	--	N
TEREPHTHALIC ACID	100-21-0	------	------	------	10	------	------	N	--	N
TEPP	107-49-3	0.05	-----	-----	0.047	------	------	Y	--	Y
TERPHENYLS	26140-60-3	-----	-----	5	------	------	5	N	--	N
1,1,1,2-TETRACHLORO-2,2-DIFLUOROETHANE	76-11-9	4170	-----	-----	4170	------	------	N	--	N
1,1,2,2-TETRACHLORO-1,2-DIFLUOROETHANE	76-12-0	4170	-----	-----	4170	------	------	N	--	N
1,1,2,2-TETRACHLOROETHANE	79-34-5	7	-----	-----	6.9	------	------	Y	--	Y
TETRACHLORONAPHTHALENE	1335-88-2	2	-----	-----	2	------	------	Y	--	N
TETRAETHYL LEAD (As Pb)	78-00-2	0.075	-----	-----	0.1	------	------	N	--	Y
TETRAHYDROFURAN	109-99-9	590	735	-----	590	737	------	N	--	N
TETRAMETHYL LEAD (As Pb)	75-74-1	0.075	-----	-----	0.15	------	------	Y	--	Y
TETRAMETHYL SUCCINONITRILE	3333-52-6	3	-----	-----	2.8	------	------	Y	--	Y
TETRANITROMETHANE	509-14-8	8	-----	-----	0.04	------	------	N	A2	N
TETRASODIUM PYROPHOSPHATE	7722-88-5	5	-----	-----	5	------	------	N	--	N
TETRYL	479-45-8	0.1	-----	-----	1.5	------	------	Y	--	Y
THALLIUM SOLUBLE COMPOUNDS (As Tl)	7440-28-0	0.1	-----	-----	0.1	------	------	Y	--	Y
4,4'-THIOBIS(6-TERT,BUTYL-m-CRESOL), (R)	96-69-5A	5	-----	-----	------	------	------	N	--	N
4,4'-THIOBIS(6-TERT,BUTYL-m-CRESOL), (T)	96-69-5B	10	-----	-----	10	------	------	N	--	N
THIOGLYCOLIC ACID	68-11-1	4	-----	-----	3.8	------	------	N	--	Y
THIONYL CHLORIDE	7719-09-7	-----	-----	5	------	------	4.9	N	--	N
THIRAM	137-26-8	5	-----	-----	1	------	------	N	--	N
TIN METAL & INORGANIC COMPOUNDS (As Sn)	7440-31-5A	2	-----	-----	2	------	------	N	--	N
TIN OXIDE (As Sn)	7440-31-5B	2	-----	-----	2	------	------	N	--	N
TIN ORGANIC COMPOUNDS (As Sn)	7440-31-5C	0.1	-----	-----	0.1	0.2	------	N	--	Y
TITANIUM DIOXIDE, RESPIRABLE FRACTION	13463-67-7A	5	-----	-----	------	------	------	N	--	N
TITANIUM DIOXIDE, TOTAL DUST	13463-67-7B	10	-----	-----	10	------	------	N	--	N
o-TOLIDINE	119-93-7	-----	-----	-----	------	------	------	N	A2	Y
TOLUENE (TOLUOL)	108-88-3	375	560	-----	188	------	------	N	--	Y
TOLUENE-2,4-DIISOCYANATE (TDI)	584-84-9	0.04	0.15	-----	0.036	0.14	------	N	--	N
TOLUENE-2,6-DIISOCYANATE (TDI)	91-08-7	-----	------	------	0.036	0.14	------	N	--	N
o-TOLUIDINE	95-53-4	22	-----	-----	8.8	------	------	N	A2	Y
m-TOLUIDINE	108-44-1	9	-----	-----	8.8	------	------	N	--	Y
P-TOLUIDINE	106-49-0	9	-----	-----	8.8	------	------	N	A2	Y
TRIBUTYL PHOSPHATE	126-73-8	2.5	-----	-----	2.2	------	------	N	--	N
TRICHLOROACETIC ACID	76-03-9	7	-----	-----	6.7	------	------	N	--	N
1,2,4-TRICHLOROBENZENE	120-82-1	-----	-----	40	------	------	37	N	--	N
1,1,2-TRICHLOROETHANE	79-00-5	45	-----	-----	55	------	------	Y	--	Y
TRICHLOROETHYLENE	79-01-6	270	1080	-----	269	537	------	N	A5	N
TRICHLOROFLUOROMETHANE	75-69-4	-----	-----	-----	------	------	5620	N	--	N
TRICHLORONAPHTHALENE	1321-65-9	5	-----	-----	5	------	------	Y	--	Y
1,2,3-TRICHLOROPROPANE	96-18-4	60	-----	-----	60	------	------	N	--	Y
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	7600	9500	-----	7670	9590	------	N	--	N
TRIETHANOLAMINE	102-71-6	------	------	------	5	------	------	N	--	N
TRIETHYLAMINE	121-44-8	40	60	-----	41	62	------	N	--	N
TRIFLUOROBROMOMETHANE	75-63-8	6100	-----	-----	6090	------	------	N	--	N
TRIMELLITIC ANHYDRIDE	552-30-7	0.04	-----	-----	------	------	0.04	N	--	N
TRIMETHYLAMINE	75-50-3	24	36	-----	12	36	------	N	--	N
TRIMETHYL BENZENE	25551-13-7	125	-----	-----	123	------	------	N	--	N
TRIMETHYL PHOSPHITE	121-45-9	10	-----	-----	10	------	------	N	--	N
2,4,6-TRINITROTOLUENE (TNT)	118-96-7	0.5	-----	-----	0.5	------	------	Y	--	Y
TRIORTHOCRESYL PHOSPHATE	78-30-8	0.1	-----	-----	0.1	------	------	N	--	Y
TRIPHENYL AMINE	603-34-9	5	-----	-----	5	------	------	N	--	N
TRIPHENYL PHOSPHATE	115-86-6	3	-----	-----	3	------	------	N	--	N
TUNGSTEN INSOLUBLE COMPOUNDS (As W)	7440-33-7A	5	10	-----	5	10	------	N	--	N
TUNGSTEN SOLUBLE COMPOUNDS (As W)	7440-33-7B	1	3	-----	1	3	------	N	--	N
TURPENTINE	8006-64-2	560	-----	-----	556	------	------	N	--	N
URANIUM, SOLUBLE AND INSOLUBLE (As U)	7440-61-1A	-----	-----	-----	0.2	0.6	------	N	--	N
URANIUM, SOLUBLE (As U)	7440-61-1B	0.05	-----	-----	------	------	------	N	--	N
URANIUM, INSOLUBLE (As U)	7440-61-1C	0.2	0.6	-----	------	------	------	N	--	N
n-VALERALDEHYDE	110-62-3	175	-----	-----	176	------	------	N	--	N
VANADIUM RESPIRABLE DUST/FUME (AS V2O5)	1314-62-1	0.05	-----	-----	0.05	------	------	N	--	N
VEGETABLE OIL MIST, RESPIRABLE FRACTION	VEG OIL-A	5	-----	-----	------	------	------	N	--	N
VEGETABLE OIL MIST, TOTAL	VEG OIL-B	15	-----	-----	10	------	------	N	--	N
VINYL ACETATE	108-05-4	30	60	-----	35	53	------	N	A3	N
VINYL BROMIDE	593-60-2	20	-----	-----	22	------	------	N	A2	N
VINYL CHLORIDE	75-01-4	-----	-----	-----	13	------	------	N	A1	N
4-VINYL CYCLOHEXENE	100-40-3	------	------	------	0.4	------	------	N	A2	N
VINYL CYCLOHEXENE DIOXIDE	106-87-6	60	-----	-----	57	------	------	N	A2	Y
VINYLIDENE CHLORIDE	75-35-4	4	-----	-----	20	79	------	N	--	N

VINYL TOLUENE	25013-15-4	480	-----	-----	242	483	------	N	--	N
VM & P NAPHTHA	8032-32-4	1350	1800	-----	1370	------	------	N	--	N
WARFARIN	81-81-2	0.1	-----	-----	0.1	------	------	N	--	N
WATER VAPOR	7732-18-5	------	------	------	------	------	------	N	--	N
WELDING FUMES (NOC), TOTAL PARTICULATE	WELDING FUME	5	-----	-----	5	------	------	N	B2	N
WOOD DUST	WOOD	5	10	------	------	------	------	N	--	N
WOOD DUST, HARD	WOOD (H)	------	-----	-----	1	------	------	N	--	N
WOOD DUST, SOFT	WOOD (S)	------	-----	-----	5	10	------	N	--	N
WOOD DUST, WESTERN RED CEDAR	WOOD (W)	2.5	-----	-----	1	------	------	N	--	N
XYLENE (O-ISOMERS)	95-47-6	435	655	-----	434	651	------	N	--	N
XYLENE (M-ISOMERS)	108-38-3	435	655	-----	434	651	------	N	--	N
XYLENE (0-,-M-,P-ISOMERS)	1330-20-7	435	655	-----	434	651	------	N	--	N
XYLENE (P-ISOMERS)	106-42-3	435	655	-----	434	651	------	N	--	N
m-XYLENE a,a-DIAMINE	1477-55-0	-----	-----	0.1	------	------	0.1	N	--	Y
XYLIDINE	1300-73-8	10	-----	-----	2.5	------	------	Y	A2	Y
YTTRIUM	7440-65-5	1	-----	-----	1	------	------	N	--	N
ZINC	7440-66-6	------	------	------	------	------	------	N	--	N
ZINC CHLORIDE FUME	7646-85-7	1	2	-----	1	2	------	N	--	N
ZINC CHROMATE (As Cr)	37300-23-5	-----	-----	-----	0.01	------	------	N	A1	N
ZINC OXIDE FUME (As ZnO)	1314-13-2A	5	10	-----	5	10	------	N	--	N

Stressor Name	Cas Number	OSHA 8-HR TWA	OSHA STEL	OSHA CEILING	ACGIH 8-HR TWA	ACGIH STEL	ACGIH CEILING	OSHA SKIN	APPX	ACGIH SKIN
ZINC OXIDE, RESPIRABLE FRACTION (As ZnO)	1314-13-2B	5	-----	-----	------	------	------	N	--	N
ZINC OXIDE, TOTAL DUST (As ZnO)	1314-13-2C	10	-----	-----	10	------	------	N	D	N
ZIRCONIUM COMPOUNDS (As Zr)	7440-67-2	5	10	-----	5	10	------	N	--	N

APPENDIX C
COMMENTS AND RECOMMENDATION FORM

INDUSTRIAL HYGIENE INFORMATION MANAGEMENT SYSTEM
COMMENTS AND RECOMMENDATIONS

NAME OF SUBMITTING ORGANIZATION/INDIVIDUAL:

ADDRESS (Street, City, State, ZIP Code):

COMMENT/RECOMMENDATION:

Section (Breathing Zone, Noise Dosimetry, etc.):

Comment/Recommendation:

Reason/Rationale for Comment/Recommendation:

Name of Submitter (Optional)	Telephone DSN: Commercial:

Date Submitted: