National Human Exposure Assessment Survey (NHEXAS)

Arizona Study

Quality Systems and Implementation Plan for Human Exposure Assessment

The University of Arizona
Tucson, Arizona 85721

Cooperative Agreement CR 821560

Standard Operating Procedure **SOP-UA-F-1.0**

Title: HHID, Sample-ID, and IRN Creation, Assignment, and Use

Source: The University of Arizona

U.S. Environmental Protection Agency
Office of Research and Development
Human Exposure & Atmospheric Sciences Division
Human Exposure Research Branch

HHID, Sample-ID and IRN Creation, Assignment and Use

1.0 PURPOSE AND APPLICABILITY

This SOP outlines HHID (household identification number), IRN (individual respondent number) and Sample-ID (sample identification number) creation, assignment and use for the NHEXAS Arizona Research Project, the AZ Border Project (Border AZ) and other Health and Environment projects. This procedure must be followed to insure consistent data collection, transportation, storage, shipment and analysis of the highest quality.

2.0 DEFINITIONS

2.1 AZ Border = The US border region is defined as 100 km north of the border. In this study, we define the border as 40 km north of the border. The Arizona Border Study or "Border AZ" is an alias for "Total Human Exposure in Arizona: A Comparison of the Border Communities and the State" conducted in Arizona by the University of Arizona / Battelle / Illinois Institute of Technology Consortium.

2.2 BAR ONE = A commercially available software package used by the Materials Technician and / or the Field Coordinator to translate pre-generated HHIDs and Sample-IDs in simple text format into a bar code (UPC) readable format.

2.3 BUCKET = A plastic container with a buckle top or tight-fitting lid. One bucket is assigned to each household to be sampled. Household identification and stage numbers are listed on the outside of the container. The bucket contains all paperwork and questionnaires to be completed by field staff or household respondents. It serves as the primary vehicle for securing and transporting forms, data and samples to and from the field through the course of the study.

2.4 CHAIN OF CUSTODY RECORD = A vital data tracking and quality assurance form which is attached to every field sampling data sheet, or bound to the container in which the sample is collected/housed. The original copy of the chain of custody record remains with the sample at all times. Chain of custody commences with sample generation by Field Team Members or Materials Technician (see Fig.1).

2.5 DATA COORDINATOR = The employee of the research project who supervises data batching, entry and verification

2.6 DESCRIPTIVE QUESTIONNAIRE = An introductory questionnaire (Qx) completed by field interview staff when enrolling a HH into the research project. This (Qx) records data on HH eligibility, HH occupant roster, HH characteristics, and Primary Respondent selection. (see Figure 2).

2.7 FAMILY SCHISM (FS) = A single character alphabetic or string variable which follows the six character numeric HHID number and is used to indicate splits from an original

household unit. All Households are given a Family Schism (FS) of "A" upon initial enrollment. If household 'splits' for some reason -- divorce, separation, death, etc., the secondary splinter household will be assigned the same HHID as the parent HH, but with a FS of "B". Thus a splinter household from HH = 123456 A would be 123456 B.

2.8 FIELD = The sampling environment or the site at which data will be collected. This is almost always at the residence of the primary respondent.

2.9 HH CONFIDENTIALITY FOLDER = This is a manila file folder which holds all physical "hard copy" forms which have the HHID number and confidential information such as the respondents full name recorded on them. These forms are kept separate from all other HH forms and questionnaires for reasons of respondent confidentiality and privacy. Field forms and questionnaires that do not contain the respondents full name, or address are maintained by the Data Coordinator. The Confidentiality Folder is secured in a locked file cabinet in the Field Coordinator's Office.

2.10 HOUSEHOLD IDENTIFICATION NUMBER (HHID) = A unique six character numeric variable assigned to each household in the study. It is always followed by a single character alphabetical variable known as the Family Schism (see 2.9 above). This unique seven character alphanumeric combination (six character numeric HHID and one character alphanumeric FS) is assigned to each participating household for identification purposes. The first two characters of the HHID (known as the prefix) indicate in which county the household resided when first contacted (see Figure 3). This number must be recorded on all data (forms, samples, questionnaires and correspondence) generated by the household.

2.11 INDIVIDUAL RESPONDENT NUMBER (IRN) = A unique number which is assigned to each individual residing in a study HH for the purposes of their unique identification and tracking. These numbers do not change once they have been assigned. The Primary Respondent in each HH is always awarded IRN = 01. The appropriate IRN must be recorded on all forms and questionnaires generated by the subject.

2.12 MATERIALS TECHNICIAN (Materials Tech) = The employee of the research project who is primarily responsible for translating previously generated Sample-IDs and HHIDs into a bar-code scanable (UPC) format using the appropriate software package, creating the labels, and assigning Sample-IDs to samples when they are first entered into the NHEXAS Tracking System.

2.13 PACKET = This is a large (9.5" x 12.5") household specific envelope which holds the physical hard copy questionnaires and field sampling forms collected from a study household. Forms stored in the HH Packet do not have any confidential information recorded on them.

2.14 QUALITY ASSURANCE (QA) = All those planned and systematic actions necessary for ensuring the accuracy, validity, integrity, preservation and utility of collected data.

2.15 QUALITY CONTROL (QC) = Those quality assurance actions providing a means to control and measure the characteristics of a datum, process, or the adherence to established parameters.

2.16 Qx = Abbreviation for questionnaire. For example, The Baseline Questionnaire may be abbreviated as The Baseline Qx.

2.17 SAMPLE-ID = A Sample Identification Number is a seven character numeric string. Each Sample-ID is unique and is not reused or reassigned for any reason. Sample-IDs have a two character prefix which indicates the sample type (see Figure 4). Sample-IDs are recorded on all samples collected for the project with a bar-coded label and/or in pen with indelible ink.

2.18 TEAM LEADER = The member of the Field Team who is primarily responsible for respondent contact, data collection, field forms and questionnaire completion, and on site QC checks of all data.

2.19 TRACKING SYSTEM = A database system containing information about the custody, transfer and storage of hard copy data, electronic data, field samples, and field sample aliquot.

2.20 VISIT = A scheduled appointment with participating respondents at their place of residence (HH) for the collection of samples, questionnaires and other data.

2.21 VISUAL IDENTIFIER (VID) = A unique three character alphanumeric string which is printed on the bar-code readable Sample-ID label when the label is generated. The VID assists the Team Leader and Team Members in readily identifying the sample type without memorizing the list of two character numeric sample prefixes. Visual Identifiers (VIDs) are listed with their sample types and prefixes in Figure 4.

3.0 REFERENCES

3.1 Lebowitz, M.D. 1993. Study Design (Revision of 31 Dec. 1993). EPA NHEXAS Cooperative Agreement.

3.2 Vertical technologies Inc. 1992. User Guide and Tutorial: Bar-One For Windows, Version 1.4.

4.0 DISCUSSION

4.1 This SOP outlines the procedures for creating and assigning HHIDs, Sample-IDs and IRNs in households participating in the NHEXAS Arizona Project, AZ Border Study (BORDER AZ) and other Health and the Environment research projects.

4.2 A combination of an HHID, FS and IRN can uniquely identify any individual in a project while maintaining respondent privacy and confidentiality. Sample-IDs uniquely identify each sample used in a project - independent of HHID, FS or IRN.

5.0 RESPONSIBILITIES

5.1 The Field Coordinator is responsible for:

(a) Generation of HHIDs and Sample-IDs using the Tracking System.
(b) Assignment of HHIDs to addresses after HH enrollment.
(c) Supervising Field Teams in the administration Qxs and enrollment of HH.
(d) Securing HH confidentiality while maintaining an address database in cooperation with the Data Coordinator.
(e) Monitoring the proper use of HHIDs, Sample-IDs and IRNs.

5.2 The Data Coordinator is responsible for:

(a) Securing HH confidentiality while maintaining an address database in cooperation with the Data Coordinator.
(b) Arranging for the immediate entry, verification and appendage of Descriptive Questionnaire data obtained by Field Teams.

5.3 The Materials Technician is responsible for:

(a) Assisting the Field Coordinator in the generation and printing of HHIDs and Sample-IDs .
(b) Assigning Sample-IDs to samples and generating Chain of Custody records (Figure 1) for each sample.

5.4 The Team Leader is responsible for:

(a) Assigning IRNs to all HH residents on the initial visit.
(b) Correctly and consistently labeling all forms, data and questionnaires with the appropriate HHID, sample-ID and IRN information.
(c) Notifying Field Coordinator immediately if there is a discrepancy in HHID or IRN assignment/usage.

5.5 All Team Members are responsible for:

(a) Correctly and consistently labeling all forms, data and questionnaires with the appropriate HHID, sample-ID and IRN information.
(b) Notifying Team Leader immediately if a discrepancy in HHID or IRN is discovered.

6.0 MATERIALS AND REAGENTS

6.1 Materials - N/A

6.2 Reagents - N/A

7.0 PROCEDURE

7.1 HHID and Sample-ID Creation

HHIDs and Sample-IDs are created using a module of the Electronic Tracking System (UA-D-28.X). The creation of these identification numbers is detailed below. Individual Respondent Numbers (IRNs) are not created, per se. IRNs are a two character numeric with a range from 01 through 99. IRN assignment is addressed in 7.2.3 below.

7.1.1 HHID Creation.

(a) HHIDs are generated by the Field Coordinator using a module of the Electronic Tracking System (UA-D-28.X). The Field Coordinator, the Data Coordinator and the project Principal Investigators are the only individuals who have access to the module in the Electronic Tracking System that creates HHIDs.

(b) Access the Tracking System with your Username and Password. You will be offered a series of choices/actions that you can perform. This list will vary with your access level (see Figure 5).

(c) Highlight the option to GENERATE HHIDs.

(d) Every county in the State of Arizona is assigned a number of pre-defined HHID prefixes (Figure 3). The Strata listed on the screen (Figure 6) will allow the user generate HHIDs for any county on the list.

(e) Each stratum will allow a maximum of approximately 500 HHIDs. Thus, Apache-1 and Apache-2 (Figure 6) will allow approximately 1000 HHIDs to be generated for this county. Each of these 1,000 or more HHIDs will begin with 12 or 13 (see figure 3).

(f) HHIDs are generated by a mathematical algorithm and dbase computer program embedded in the Electronic Tracking System. Algorithm details are provided in SOP # UA-D-28.X. A very brief summary of the process follows. The algorithm builds an HHID with the following characteristics:

1. The first two characters of the six character HHID string are one of the allowed prefixes for that county (Fig. 3).
2. The last character of the HHID is a numeric checksum digit that enables generic bar-code scanning devices to alert the operator of a 'bad-scan'. That is, the last character in the HHID is a mathematical computation of the previous characters. Thus, if the HHID bar-code is not properly read by the scanning device, the computation based on the characters may not equal the checksum digit, and the operator will be alerted.
3. Double or multiple repeating digits, e.g., '11', or '333' are not permitted. Double or repeated digits embedded within HHIDs and Sample-IDs have been problematic in previous projects.
4. Leading, trailing or embedded zeros are not permitted. These characters have also proven problematic in previous projects.

(g) Select the stratum of interest and indicate the number of HHIDs you wish to generate from within that stratum when prompted.

(h) The HHIDs will appear on the screen as they are generated. Select PRINT when prompted and a list of the newly generated HHIDs will be exported to the printer. Save this list for step (n) below.

(i) Once a single HHID or series of HHIDs has been created, the HHID is automatically saved in the Tracking System HHID Database. This database contains the complete list of all valid HHIDs. HHIDs may only be generated once.

(j) After the HHIDs are created, a second module must be run to print the created HHIDs to a flat ASCII or text file for bar-code printing. Use the ESC key to return to the main menu (Fig. 5) and choose the option titled: WRITE HHIDs FOR BAR-CODES.

(k) Select the county and stratum for which you just generated HHIDs. The Tracking System will inventory all HHIDs that have been generated for that stratum and determine which HHIDs in that stratum have not yet been printed.

(l) The program will request a filename in which to print the HHIDs. The HHIDs are saved in an ASCII file and are already formatted for direct import into the Bar-One software package.

(m) Once the HHIDs have been printed for bar-coding, they may not be re-printed from within the Electronic Tracking System.

(n) Open the exported text file and compare the HHIDs listed in the file to the print-out obtained in step (h) above. Conduct a 10% check of the file and make sure that they match. If you find one error, conduct a complete 100% check of the file and contact the Data Manager.

(o) Import the HHIDs into the BAR-ONE software program and print one copy of each HHID to a single .5 by 1.75 inch label (Figure 7).

(p) Save the printed sheet in the Field Coordinators office for future assignment to HHs in the appropriate strata.

(q) Save the electronic HHID file on disk for future reference.

7.1.2 Sample-ID Creation.

(a) Sample-IDs are generated by the Field Coordinator and/or the Materials Technician using a module of the Electronic Tracking System (UA-D-28.X).

(b) Access the Tracking System with your Username and Password. You will be offered a series of choices/actions that you can perform. This list will vary with your access level (see Figure 5).

(c) Highlight the option to GENERATE SAMPLE-IDs.

(d) Sample-IDs may be generated for any of the samples listed in Figure # 4. New sample types may be added by the Field Coordinator and the Data Coordinator.

(e) Sample-IDs are generated by a mathematical algorithm and dbase computer program embedded in the Electronic Tracking System. Approximately 5,000 Sample-IDs of each type may be generated. Algorithm details are provided in SOP # UA-D-28.X. A very brief summary of the process follows. The algorithm builds a Sample-ID with the following characteristics:

1. The first two characters of the seven character Sample-ID string are limited to the two digit prefixes defined for each sample type in Figure # 4.
2. The last character of the Sample-ID is a numeric checksum digit that enables generic bar-code scanning devices to alert the operator of a 'bad-scan'. That is, the last character in the Sample-ID is a mathematical computation of the previous characters. Thus, if the Sample-ID bar-code is not properly read by the scanning device, the computation based on the characters may not equal the checksum digit, and the operator will be alerted.

3. Double or multiple repeating digits, e.g., '11', or '333' are not permitted. Double or repeated digits embedded within Sample-IDs and HHIDs have been problematic in previous projects.
4. Leading, trailing or embedded zeros are not permitted. These characters have also proven problematic in previous projects.

(f) Select the sample type of interest and indicate the number of Sample-IDs you wish to generate for that sample type when prompted.

(g) The Sample-IDs will appear on the screen as they are generated. Select PRINT when prompted and a list of the newly generated Sample-ID s will be exported to the printer. Save this list for step (n) below.

(h) Once a single Sample-ID or series of Sample-ID s has been created, the Sample-ID is automatically saved in the Tracking System Sample-ID Database. This database contains the complete list of all valid Sample-IDs. Sample-IDs may only be generated once.

(i) After the Sample-IDs are created, a second module must be run to print the created Sample-IDs to a flat ASCII or text file for bar-code printing. Use the ESC key to return to the main menu (Fig. 5) and choose the option titled: WRITE SAMPLE-IDs FOR BAR-CODES.

(j) Select the sample type for which you just generated Sample-IDs. The Tracking System will inventory all Sample-IDs that have been generated for that type of sample and determine which Sample-IDs in that stratum have not yet been printed.

(k) The program will request a filename in which to print the Sample-IDs. The Sample-IDs are saved in an ASCII file and are already formatted for direct import into the Bar-One software package.

(l) Once the Sample-ID have been printed for bar-coding, they may not be re-printed from within the Electronic Tracking System.

(m) Open the exported text file and compare the Sample-IDs listed in the file to the print-out obtained in step (h) above. Conduct a 10% check of the file and make sure that they match. If you find one error, conduct a complete 100% check of the file and contact the Data Manager.

(n) Import the Sample-IDs into the BAR-ONE software program and print four copies of each Sample-ID on .5 by 1.75 inch labels (Figure 8).

(o) The Materials Technician keeps the printed and bar-coded Sample-IDs in a hanging file folder for future assignment to samples of the appropriate type.

(q) Save the electronic Sample-ID file on disk for future reference.

7.2 HHID, Sample-ID and IRN Assignment.

HHID and Sample-ID assignment occurs in the Field Office. IRN assignment usually occurs in the field during the administration of the Descriptive Questionnaire (Figure 2) during the enrollment visit.

7.2.1 HHID Assignment

Details on the selection of Census Tracts, Census Blocks and addresses, and on the enrollment of the study population are beyond the scope of this SOP and will not be

described here. Extensive information on these topics are provided in the QSIP submitted for review with this SOP.

(a) The Field Coordinator dispatches the Field Crew to pre-selected addresses to conduct enrollment. The Field Crew make repeated attempts to contact the residents at the pre-selected addresses. Once contact is made, the Field Crew complete the appropriate sections of the Descriptive Questionnaire (Figure 2).

(b) When the Field Crew return from the Field, they deliver the completed Descriptive Qxs to the Field Coordinator.

(c) The Field Coordinator assigns a HHID to each Descriptive Questionnaire by placing a pre-printed bar-code label on the first page of the questionnaire. The HHIDs are assigned according to the county in which the HH is located.

(d) The Field Team Leader (or delegate) uses and indelible ink pen to label each page of each Descriptive Questionnaire with the HHID and FS corresponding to the bar-coded HHID that was applied by the Field Coordinator.

(e) The Family Schism (FS) upon enrollment is "A" on all housing units. It may be discovered during follow-up household visits or subsequent contacts that members of the original household who resided in the housing unit when the household was enrolled, no longer reside at that location. If those individuals who 'splintered' from or left the original household can be contacted, they will be assigned a FS of "B" or greater, depending on the number of splinter groups.

(f) These questionnaires are then independently reviewed by alternate team members to eliminate errors in transcription or transposition of numbers.

(g) Once assigned to a household, the HHID may never be re-assigned to another HH or un-assigned. The HHID assigned by the Field Coordinator is subsequently used in all project activities relating to that housing unit.

(h) The labeled Descriptive Questionnaires are transferred to the Data Coordinator for entry into electronic databases. Once the questionnaires have been processed by the data section, they are returned to the Field Coordinator's office and stored in its own HH Confidentiality Folder in a locked file cabinet.

7.2.2 Sample-ID Assignment

(a) The Field Coordinator, or Materials Technician removes a sheet of Sample-ID labels (Figure 8) from the appropriate hanging file folder in the file cabinet located in the Field Staging Area.

(b) Four copies of each sample-ID are made during the creation of sample-ID bar-code labels (see 7.1.2 above).

(c) Three copies of each sample-ID are removed and placed on the sample container.

(d) The fourth copy of the sample-ID is placed on the sample Chain of Custody record (Figure 1).

(e) The sample-ID is then written on the sample container and Chain of Custody record in indelible ink.

(f) A second individual then conducts a 100% check of all data recorded on each Chain of Custody record and on each sample container. The individual will look for several types of error:

1. The number written on the Chain of Custody record does not match the bar-code label.
2. Different bar-code labels appear on the same sample container

3. A Chain of Custody record is paired with the wrong sample.

(g) After the 100% check, the Field Coordinator or Materials Technician accesses the Electronic Tracking System.

(h) A series of options are offered. This list of options will vary with each individuals access level (see Figure 5).

(i) Highlight the option to INITIAL SAMPLE LOG-IN.

(j) The bar-code on each sample is the scanned or key punched into the Tracking System. The Tracking System verifies the authenticity of the sample-ID. If the sample-ID has already been logged-in, the Tracking System will notify the operator. The operator may choose to review the information on a sample, or they may modify it, if they have sufficient clearance to do so.

(k) The operator is then asked to verify the sample-ID and given an opportunity to modify several attributes of the sample:

1. Sample Lot Number
2. Sample Function: Real, Blank, Spike, Duplicate
3. Date Received from Vendor:

(l) Attributes related to sample type or sample-ID may not be changed. If changes are made, the operator is asked to confirm the changes before the record is updated.

(m) The Tracking System then prompts the operator to scan or keypunch the next sample.

(n) The sample is then stored in accordance with SOP # UA-F-2.X

7.2.3 IRN Assignment

Unlike HHID and Sample-ID assignment, IRN assignment normally occurs in the field. Individuals residing in the house are listed on the Household Roster portion of the Descriptive Qx. The Field Crew then use a series of random number tables to select the Primary Respondent (P.IRN). The Primary Respondent is the individual who will be asked to participate directly in the most extensive sampling conducted at the household

(a) During the initial interview (enrollment), the Team Leader records respondent's comments/answers in the Descriptive Qx (Fig.2).

(b) One respondent is chosen to serve as the primary respondent for the project. The selection is made through the use of roster numbers and a random number tables. A sample of one of the random number tables used in the field may be seen in Figure 9.

(c) In single person homes, the sole resident will serve as the primary respondent. Descriptive Questionnaire (Fig. 2) and roster number becomes the sole Individual Respondent Number, therefore Roster Number = IRN = 01.

(d) In two person homes, the random number table that randomly lists the numbers "1" and "2" is used to randomize the individuals listed on the Descriptive Qx roster and select the primary respondent (P. IRN). If the person recorded in Roster position two is selected, that person is given IRN = 01 , and the second person in the HH is given IRN = 02.

(e) Once the random number table has been used to select the respondent, the entry on the table that identified the individual to be selected as P.IRN for that household is crossed of the table. In this way, the Field Team scroll through each of the lists when selecting primary respondents.

(f) In homes with greater than two permanent residents, the random number table is again used to randomly select the primary respondent from the Roster numbers in the Descriptive Qx (Fig. 2). Once selected, the Primary Respondent is assigned IRN = 01, and the remaining respondents are numbered sequentially by age.

(g) When greater than ten respondents reside within the same home, the selection of the primary respondent will be deferred until a consultation with the Field Coordinator has been made. The Field Crew is only supplied with random number tables that apply to households with N= 2 through N = 9 respondents.

(h) Once the selection of the P.IRN has been made, the Team Leader then records the IRN information and the primary respondent data on the Descriptive Qx.

(i) The Team Leader submits the Descriptive Qx to the Field Coordinator for QA within 24 hours of collection.

(j) The Descriptive Qx is reviewed by the Field Coordinator, processed (see 7.2.1 (c) through (h)), and transferred to the Data Coordinator. The data section then scan the contents of the Descriptive Qx into electronic databases.

7.3 HHID, Sample-ID and IRN USE

7.3.1 HHID Use

(a) The Field Coordinator maintains a copy of the Descriptive Questionnaire database in conjunction with the Data Coordinator. This database is encrypted to maintain respondent privacy and confidentiality.

(b) The Field Coordinator accesses the database to provide the information needed by the Field Crew to conduct sampling. This information is provided on a "need to know" basis.

(c) The Field Coordinator summarizes the household information necessary to conduct field sampling using the Confidential Home Appointment Sheet (Figure 10).

(d) HHID and IRNs are constant - they do not change from one stage of the project to the next. These numbers are used for tracking and analysis and they must be used and documented with consistency.

(e) The HHID number and FS assigned to the residence sampled is recorded on all data, forms, samples, questionnaires and correspondence concerning the HH.

7.3.2 Sample-ID Use

(a) Sample-IDs uniquely identify every sample collected in the research project.

(b) The seven character sample-ID was chosen to facilitate ease of memorization while maximizing the number of sample-IDs that could be generated for each sample type. Field team Members are taught that each sample-ID may be broken down into a three character element followed by a four character element - just like a US

telephone number. For example, the Sample-ID 1237692 may be more easily remembered as 123 - 7692. This may help minimize transcription errors.

(c) Sample-IDs are recorded in indelible ink on every sample or sample container that is used in the project. If a bar-coded label falls off the sample, the sample will still be identifiable.

(d) Sample-ID use is facilitated by the use of Visual Identifiers (VIDs). These three character alphabetic string variables help the field team identify the type of sample that they are dealing with and help reduce anxiety relate to memorizing and recalling a list of 99 possible prefixes. A list of VIDs and Sample-ID prefixes may be seen in Figure 4.

7.3.3 IRN Use

(a) The Team Leader is responsible for insuring correct and consistent utilization of IRNs in the field. As new members of a household are encountered, new IRNs will be generated. IRNs are not reassigned due to death, divorce or any other reason.

(b) After the enrollment of the household, the Team Leader obtains appropriate HHIDs and IRNs for houses to be sampled or contacted from the Field Coordinator.

(c) The Team Leader verifies the IRN and first name information on the Home Appointment Sheet and records the names and status of any previously absent or un-reported HH members. If a status change has occurred such as death, divorce or moved-in/moved-out, it is recorded on an update Descriptive Qx and discussed with the Field Coordinator upon return to the Field Office.

(d) A new Descriptive Qx is completed at every stage of sampling. Additional HH members are recorded on this Qx and assigned a permanent respondent number by the Field Coordinator.

7.4 Calculations

7.4.1 A table of randomized roster numbers from one through nine is used to determine which individual will be selected to serve as the primary respondent P.IRN for a given HH. Each Field Team moves through the table sequentially to assign the P.IRN to a randomly selected member of the household listed on the Descriptive Qx roster.

7.5 Quality Control

7.5.1 Tolerance Limits - N/A

7.5.2 Detection Limits - N/A

7.5.3 Corrective Actions

(a) At each HH the Team Leader supervises all work and forms completed by the Field Crew. Team Members work collectively and check each other's work for

accuracy, precision and compliance with SOP procedure and policy. The Team Leader is primarily responsible for the validity and accuracy of all IRNs assigned and insuring the correct usage of IRN and HHID numbers in the field.

(b) First name and HHID-IRN of the respondent are recorded on all of their forms and questionnaires. First name is cross checked on all forms to prevent any mis-assignment of IRNs.

(c) Apparent mis-labeling problems detected at any time may be corrected by the Team Leader after approval from the Field Coordinator. Approved corrections will be made when appropriate and in accordance with SOP # UA-C-2.0. The Field Coordinator **MUST** notify the Data Coordinator of any errors related to IRN or HHID assignment.

8.0 RECORDS

8.1 Descriptive Questionnaire

8.1.1 This questionnaire (Fig. 2) will serve as the primary record of initial contact with the HH. The Team Leader is responsible for the thorough completion of this form. The HH Roster information (page 4) is used to assign IRNs. Enter data in the appropriate fields on the form.

8.1.2 This questionnaire is also used to append, or update IRN or other information related to the HH that is obtained during subsequent HH visits or other forms of contact with the HH.

8.1.3 This questionnaire is maintained in a locked file cabinet in the Field Coordinators office.

Figure 1. Chain of Custody Record

Chain of Custody Record
NHEXAS Arizona Project (CR-821560)
Respiratory Sciences
1435 N. Fremont Ave
Tucson, AZ 85719
(520) 626 - 4226

Sample Type: ______________. page ____ of ____.

Generated by: ______________ / ______________
print name *signature*

Date Generated	Time	Sample ID	# of Containers	Remarks
___/___/___	___:___			

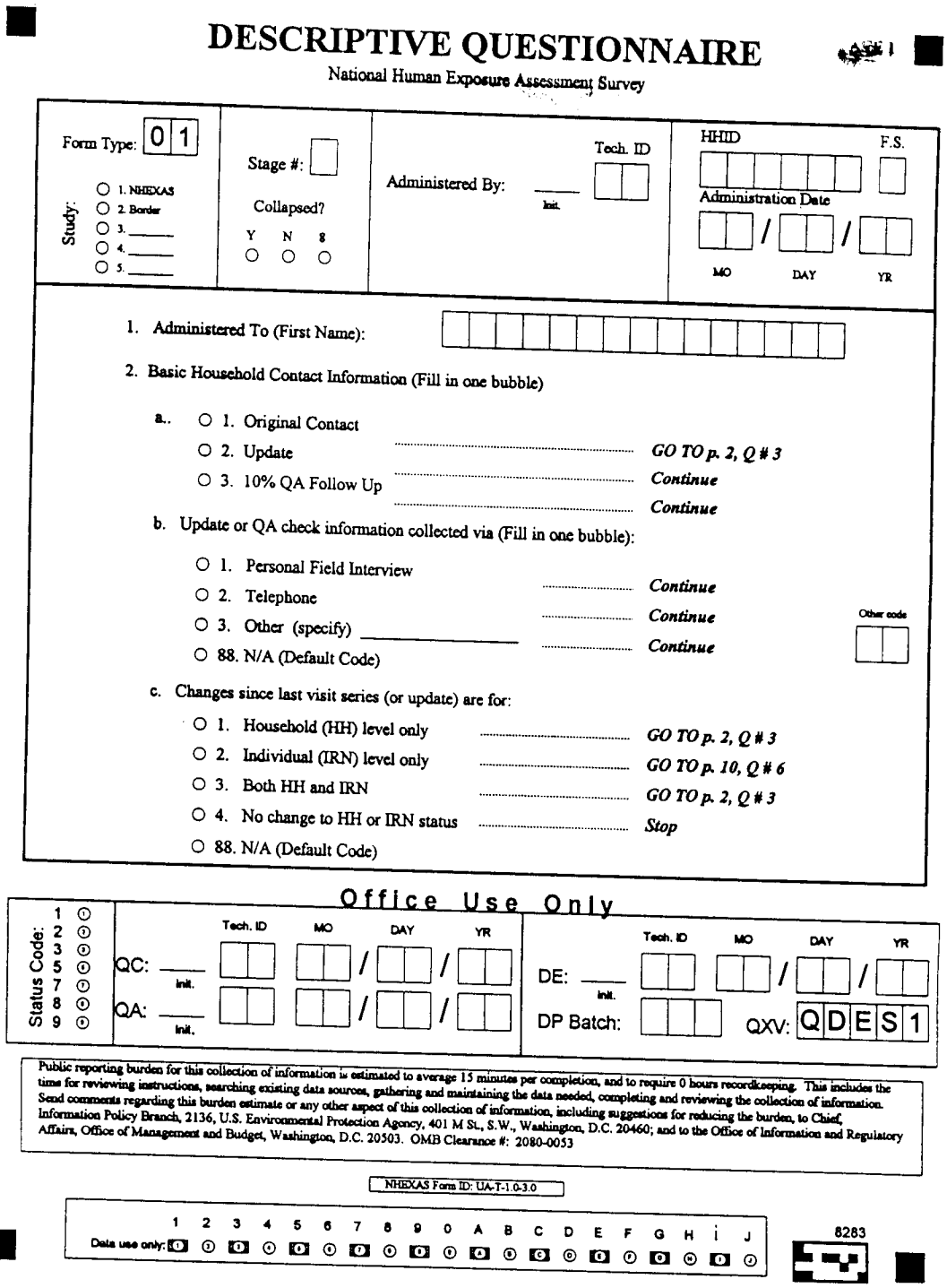
History of Sample Handling and Custody

Relinquished or Received	Signature	Date mo / day / yr	Time	Action
[Rel] or [Rec]		___/___/___	___:___	
[Rel] or [Rec]		___/___/___	___:___	
[Rel] or [Rec]		___/___/___	___:___	
[Rel] or [Rec]		___/___/___	___:___	
[Rel] or [Rec]		___/___/___	___:___	
[Rel] or [Rec]		___/___/___	___:___	
[Rel] or [Rec]		___/___/___	___:___	
[Rel] or [Rec]		___/___/___	___:___	
[Rel] or [Rec]		___/___/___	___:___	
[Rel] or [Rec]		___/___/___	___:___	
[Rel] or [Rec]		___/___/___	___:___	
[Rel] or [Rec]		___/___/___	___:___	
[Rel] or [Rec]		___/___/___	___:___	
[Rel] or [Rec]		___/___/___	___:___	
[Rel] or [Rec]		___/___/___	___:___	
[Rel] or [Rec]		___/___/___	___:___	

FORM = UA-G4.0 - 1.2

Attach Additional Pages as Necessary

Figure 2. Descriptive Questionnaire. (page 1 of 12)



DESCRIPTIVE QUESTIONNAIRE

National Human Exposure Assessment Survey

Form Type: 01

Study: ○ 1. NHEXAS ○ 2. Border ○ 3. ____ ○ 4. ____ ○ 5. ____

Stage #: ____ Collapsed? Y ○ N ○ 8 ○

Administered By: ____ Init. Tech. ID ____

HHID ____ F.S. ____

Administration Date ____ / ____ / ____ MO DAY YR

1. Administered To (First Name): ____

2. Basic Household Contact Information (Fill in one bubble)

a.. ○ 1. Original Contact
○ 2. Update ..... *GO TO p. 2, Q # 3*
○ 3. 10% QA Follow Up ..... *Continue*
..... *Continue*

b. Update or QA check information collected via (Fill in one bubble):

○ 1. Personal Field Interview ..... *Continue*
○ 2. Telephone ..... *Continue*
○ 3. Other (specify) ____ ..... *Continue* Other code ____
○ 88. N/A (Default Code)

c. Changes since last visit series (or update) are for:

○ 1. Household (HH) level only ..... *GO TO p. 2, Q # 3*
○ 2. Individual (IRN) level only ..... *GO TO p. 10, Q # 6*
○ 3. Both HH and IRN ..... *GO TO p. 2, Q # 3*
○ 4. No change to HH or IRN status ..... *Stop*
○ 88. N/A (Default Code)

Office Use Only

Status Code: 1 2 3 5 7 8 9

QC: ____ Init. Tech. ID ____ MO ____ DAY ____ YR ____

QA: ____ Init. Tech. ID ____ MO ____ DAY ____ YR ____

DE: ____ Init. Tech. ID ____ MO ____ DAY ____ YR ____

DP Batch: ____ QXV: Q D E S 1

Public reporting burden for this collection of information is estimated to average 15 minutes per completion, and to require 0 hours recordkeeping. This includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Chief, Information Policy Branch, 2136, U.S. Environmental Protection Agency, 401 M St., S.W., Washington, D.C. 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503. OMB Clearance #: 2080-0053

NHEXAS Form ID: UA-T-1.0-3.0

Data use only: 1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J

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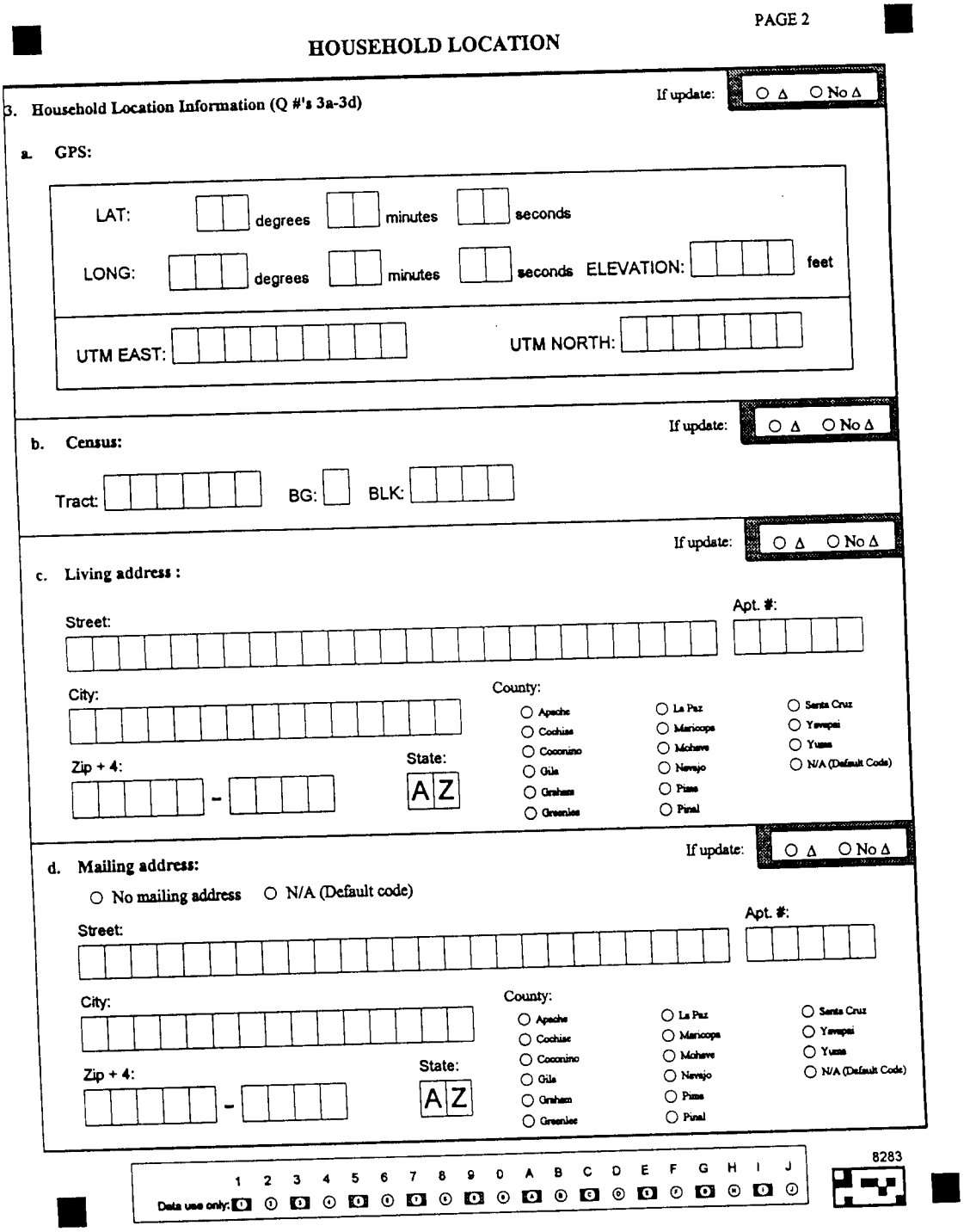
Figure 2. Descriptive Questionnaire. (page 2 of 12)



PAGE 2

HOUSEHOLD LOCATION

3. Household Location Information (Q #'s 3a-3d) If update: ○ Δ ○ No Δ

a. GPS:

LAT: ☐☐ degrees ☐☐ minutes ☐☐ seconds

LONG: ☐☐☐ degrees ☐☐ minutes ☐☐ seconds ELEVATION: ☐☐☐☐ feet

UTM EAST: ☐☐☐☐☐☐☐☐ UTM NORTH: ☐☐☐☐☐☐☐

b. Census: If update: ○ Δ ○ No Δ

Tract: ☐☐☐☐☐☐ BG: ☐ BLK: ☐☐☐☐

c. Living address : If update: ○ Δ ○ No Δ

Street: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ Apt. #: ☐☐☐☐☐

City: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Zip + 4: ☐☐☐☐☐ - ☐☐☐☐ State: AZ

County:

○ Apache	○ La Paz	○ Santa Cruz
○ Cochise	○ Maricopa	○ Yavapai
○ Coconino	○ Mohave	○ Yuma
○ Gila	○ Navajo	○ N/A (Default Code)
○ Graham	○ Pima	
○ Greenlee	○ Pinal	

d. Mailing address: If update: ○ Δ ○ No Δ

○ No mailing address ○ N/A (Default code)

Street: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ Apt. #: ☐☐☐☐☐

City: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Zip + 4: ☐☐☐☐☐ - ☐☐☐☐ State: AZ

County:

○ Apache	○ La Paz	○ Santa Cruz
○ Cochise	○ Maricopa	○ Yavapai
○ Coconino	○ Mohave	○ Yuma
○ Gila	○ Navajo	○ N/A (Default Code)
○ Graham	○ Pima	
○ Greenlee	○ Pinal	

Data use only: 1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J

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Figure 2. Descriptive Questionnaire. (page 3 of 12)

HHID:

CONTACT HISTORY

PAGE 3

If update: ○ Δ ○ No Δ

4. If original contact, record (a) contact history, (b) final code from list below, and (c) participation level if applicable. If update, ask Q #'s 5c - 5e on next page and then record current final code and participation level below.

Contact	DATE (MO / DAY / YR)	TIME	COMMENTS	Pending Code	TECH ID
1.	/ /	:			Init.
2.	/ /	:			Init.
3.	/ /	:			Init.
4.	/ /	:			Init.
5.	/ /	:			Init.
6.	/ /	:			Init.
7.	/ /	:			Init.
8.	/ /	:			Init.
9.	/ /	:			Init.
10.	/ /	:			Init.
Final Code	MO / DAY / YR	:		Final Code	Tech. ID / Init.

PARTICIPATION LEVEL *Fill all bubbles that apply.*

- ○ 1. Descriptive complete
- ○ 2. Baseline complete for P.R.
- ○ 3. Agrees to Stage 1
- ○ 4. Agrees to Stage 2
- ○ 5. Agrees to Stage 3
- ○ 6. Agrees to Stage 4
- ○ 7. Refuses Stage 2
- ○ 8. Refuses Stage 3
- ○ 9. Unknown level of partic.
- ○ 88. Not applicable

COMMENTS: _____

I. PENDING CODES

01 = No one at household
02 = Eligible screening respondent unavailable
03 = Neighbor indicates occupancy
04 = Contact is physically/mentally incompetent - return later
05 = Language Barrier - return with translator
06 = Appointment broken by respondent
07 = Partial interview - return later
08 = Other (Specify in comments section)

II. FINAL CODES

A. If HH is NOT eligible:

31 = Vacant housing unit
32 = No contact after 10 attempts
33 = Eligible screening repondent permanently unavailable
34 = Not a primary residence
35 = Physically/mentally incompetent - all contacts
36 = Not a housing unit
37 = Group quarters
38 = Language Barrier - Interpreter Unavailable
39 = Other (Specify in comments section)

B. If HH is eligible:

40 = Enrolled ..... *Continue*
55 = REFUSED (TOTAL) ..... *Stop*

Data use only: 1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J

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Figure 2. Descriptive Questionnaire. (page 4 of 12)

INTRODUCTION PAGE 4

5. Hello. I'm (Name) with NHEXAS AZ of the University of Arizona. We are conducting a survey in cooperation with the Environmental Protection Agency on exposures to substances in the environment in and around your home. You have been selected at random to participate in this survey. We mailed a letter to this address that explains the importance of your participation. Do you remember receiving this letter?

If letter not received, hand copy to respondent. Allow time for reading. Answer any questions.

a. *Verify the address in Q # 3c and make any necessary corrections. If the residence has a separate mailing address, then record it in Q # 3d.*

b. *Verify that the respondent is a PERMANENT RESIDENT of the household not a baby/house sitter etc., resides with members of the household at least half of the year, and is AT LEAST 18 YEARS OLD. If respondent is not a resident of the household or is not 18 years or older, request to speak to someone eligible to answer for the household.*

If eligible respondent	*Continue*
If NO eligible respondent	*STOP, enter PENDING CODE 02 in Contact History Table, and thank respondent. Arrange a date/time for contact with another eligible respondent.*

c. Is this property your primary residence or is it a vacation home or second home where you live less than half the year?
Fill in ONE bubble:

○ 1. Primary Residence	*Continue*
○ 2. Secondary Residence	*Complete Descriptive Questionnaire, but household is INELIGIBLE. Enter FINAL CODE in Contact History Table and then GO TO Q # 5d.*
○ 88. N/A (Default Code)	

d. Do MORE THAN 10 PEOPLE live at this address?
Fill in ONE bubble:

○ 1. Yes	*Continue*
○ 2. No	*GO TO Q # 6*
○ 88. N/A (Default Code)	

~~*e. Probe for relationships. Is this (house/apartment) a group quarters?*~~
~~*Fill in ONE bubble.*~~

○ 1. Yes	*Complete Descriptive Questionnaire, but household is INELIGIBLE. Enter FINAL CODE in Contact History Table. GO TO Q # 6.*
○ 2. No	*GO TO Q # 6*
○ 88. N/A (Default Code)	

Data use only: 1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J

8283

Figure 2. Descriptive Questionnaire. (page 5 of 12)

HHID: **HOUSEHOLD ROSTER QUESTIONS: Part I** PAGE 5

6. **Household Roster Questions (Q #'s 6a - 6i)**

a. First I would like to ask a few general questions about you and the other people who live here now. Just to be sure I account for everyone, please tell me the first names of all the people who currently live here. Let's begin with the person or persons who own the residence or pay the rent.

Enter first name(s) in COLUMN B of the ROSTER. Enter relationship to head if first name(s) is refused.

b. I have listed (NAME[s]). Is there anyone else living here now such as friends, roomers, or other people we might have overlooked?

If so, ADD them to the ROSTER.

Is (NAME) a full-time resident of this household, that is a person who lives in the residence year round except for short periods of time?

Yes ..... *Continue*
No ..... *DELETE from roster and continue with NEXT NAME.*

c. ***Fill in the bubble of the sex of each person in COLUMN C (M = MALE and F = FEMALE). Ask if not obvious.***

d. What is (NAME's) year of birth? ***Record year of birth in the print field in COLUMN D.***

e. What is (NAME's) race? ***Read choices and fill print field with correct code for race in COLUMN E.***

(1) White
(2) Black or African-American
(3) American Indian
(4) Eskimo or Aleut
(5) Asian or Pacific Islander
(6) Some other race (Specify:_____ Code:____)
(55) REFUSED
(88) NOT APPLICABLE *(Default Code)*
(99) DON'T KNOW

f. Is (NAME) of Hispanic or Spanish origin? ***Read choices and fill in ONE bubble in COLUMN F.***

(Y) Yes
(N) No
(55) REFUSED
(88) NOT APPLICABLE *(Default Code)*
(99) DON'T KNOW

g. How much school has (NAME) completed?

Read choices and, in COLUMN G, fill the bubble with the correct code for the highest level completed or degree received. If currently in school, write the highest level of the PREVIOUS grade attended or highest degree received.

(1) No schooling completed or kindergarten only
(2) Primary or middle school (Grade 1 through 8)
(3) Some high school (Grade 10 through 11)
(4) High school graduate (Grade 12 or GDE)
(5) Some college or technical school
(5) College graduate
(6) Some post-college
(55) REFUSED
(88) NOT APPLICABLE *(Default Code)*
(99) DON'T KNOW

h. Does (NAME) smoke tobacco products? ***Fill in ONE bubble in COLUMN H.***

(Y) Yes ..... *Continue below*
(N) No ..... *Go to Q # 6j*
(55) REFUSED ..... *Go to Q # 6j*
(88) NOT APPLICABLE ..... *(Default Code)*
(99) DON'T KNOW ..... *Go to Q # 6j*

i. Does (NAME) smoke inside the house? ***Fill in ONE bubble in COLUMN I.***

(Y) Yes
(N) No
(55) REFUSED
(88) NOT APPLICABLE *(Default Code)*
(99) DON'T KNOW

Data use only: 1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J

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Figure 2. Descriptive Questionnaire. (page 6 of 12)

HOUSEHOLD ROSTER QUESTIONS: Part II PAGE 6

6. **Household Roster Questions** *Continued* (Q #'s 6j - 6k)

j. Does (NAME) work outside the home? *Fill in ONE bubble in COLUMN K.*

(Y) Yes
(N) No

(55) REFUSED
(88) NOT APPLICABLE *(Default Code)*
(99) DON'T KNOW

k. Does (NAME) attend school or daycare outside the home? *Fill in ONE bubble in COLUMN M.*

(Y) Yes
(N) No

(55) REFUSED
(88) NOT APPLICABLE *(Default Code)*
(99) DON'T KNOW

NOTE: In the "Household Roster Questions" section of the Descriptive Questionnaire, question numbers 6l, 6m, 6n, 6o, and 6p were eliminated by OMB after the printing of this scannable form version (Qxv = QDES1; Teleform Form_ID = 8283). Page 5 and page 6 (this page) were re-printed with these changes incorporated.

Henceforth, the answer for question 6j is recorded in column K of the Roster, and the answer for question 6k is recorded in column M of the Roster.

The following columns in the Roster are NO LONGER APPLICABLE: J, L, N, O, and P.

Comments: _____

Data use only: 1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J

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Figure 2. Descriptive Questionnaire. (page 7 of 12)

HHID:

ROSTER: Part I

PAGE 7

A Rost. ID	B First Name	C Sex	D Year of Birth	E Race
a.		M F 55 88	YR 1	1 2 3 4 5 6 55 88 99
b.		M F 55 88	1	1 2 3 4 5 6 55 88 99
c.		M F 55 88	1	1 2 3 4 5 6 55 88 99
d.		M F 55 88	1	1 2 3 4 5 6 55 88 99
e.		M F 55 88	1	1 2 3 4 5 6 55 88 99
f.		M F 55 88	1	1 2 3 4 5 6 55 88 99
g.		M F 55 88	1	1 2 3 4 5 6 55 88 99
h.		M F 55 88	1	1 2 3 4 5 6 55 88 99
i.		M F 55 88	1	1 2 3 4 5 6 55 88 99
j.		M F 55 88	1	1 2 3 4 5 6 55 88 99
k.		M F 55 88	1	1 2 3 4 5 6 55 88 99
l.		M F 55 88	1	1 2 3 4 5 6 55 88 99
m.		M F 55 88	1	1 2 3 4 5 6 55 88 99

OTHER RACE: *Specify beside appropriate roster ID below.*

a. _____ e. _____ i. _____

b. _____ f. _____ j. _____

c. _____ g. _____ k. _____

d. _____ h. _____ l. _____

m. _____

RACE

(1) White
(2) Black or African-American
(3) American Indian
(4) Eskimo or Aleut
(5) Asian or Pacific Islander
(6) Some other race ..... *Specify to left*
(55) REFUSED
(88) N/A *(Default Code)*
(99) DON'T KNOW

Data use only: 1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J

8283

Figure 2. Descriptive Questionnaire. (page 8 of 12)

PAGE 8

ROSTER: Part II

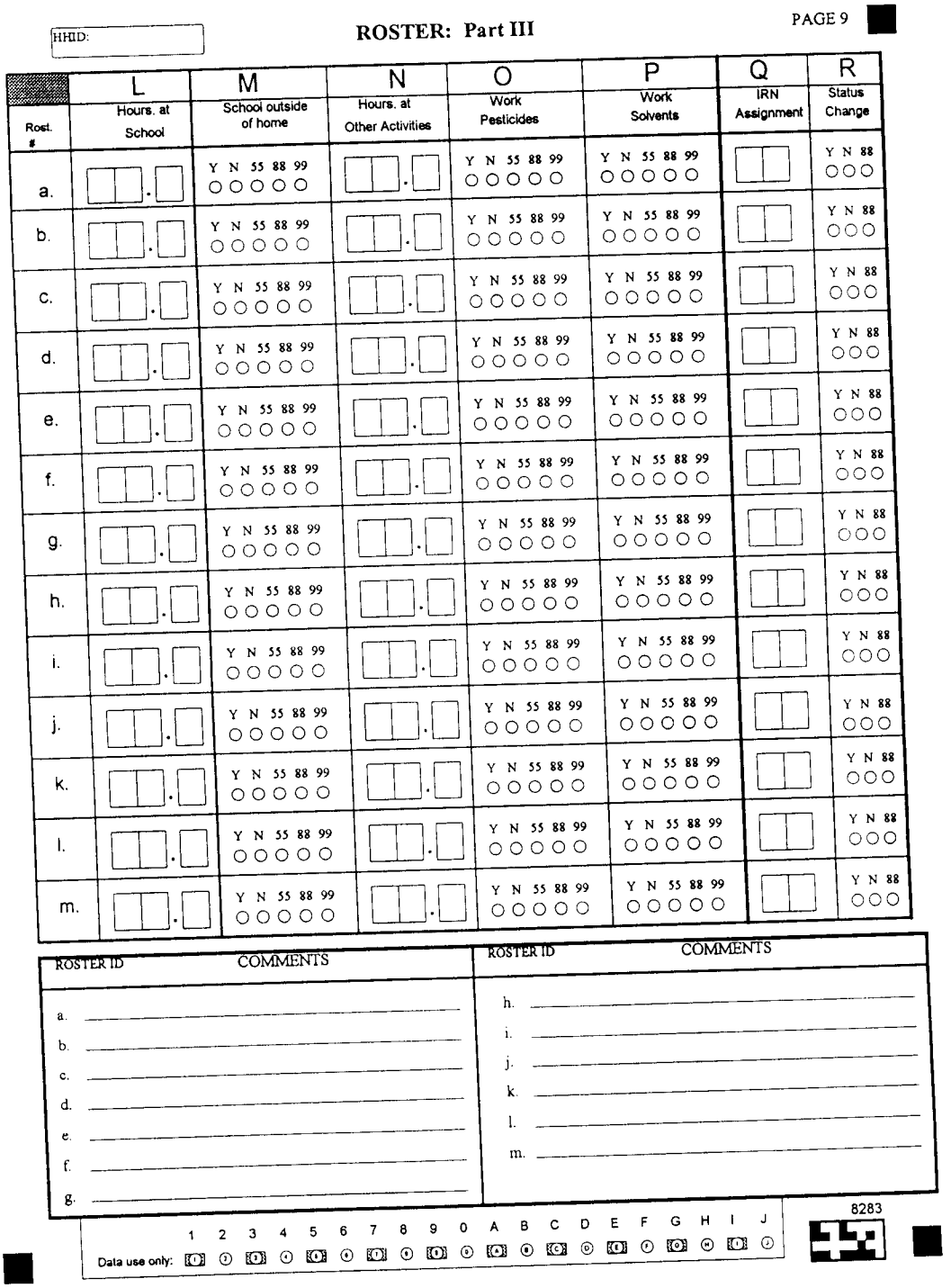
Rost. ID	F Hispanic	G School Completed	H Smoke	I Smoke Inside	J Hours. at Work	K Work outside of home
a.	Y N 55 88 99	1 2 3 4 5 6 7 55 88 99	Y N 55 88 99	Y N 55 88 99	.	Y N 55 88 99
b.	Y N 55 88 99	1 2 3 4 5 6 7 55 88 99	Y N 55 88 99	Y N 55 88 99	.	Y N 55 88 99
c.	Y N 55 88 99	1 2 3 4 5 6 7 55 88 99	Y N 55 88 99	Y N 55 88 99	.	Y N 55 88 99
d.	Y N 55 88 99	1 2 3 4 5 6 7 55 88 99	Y N 55 88 99	Y N 55 88 99	.	Y N 55 88 99
e.	Y N 55 88 99	1 2 3 4 5 6 7 55 88 99	Y N 55 88 99	Y N 55 88 99	.	Y N 55 88 99
f.	Y N 55 88 99	1 2 3 4 5 6 7 55 88 99	Y N 55 88 99	Y N 55 88 99	.	Y N 55 88 99
g.	Y N 55 88 99	1 2 3 4 5 6 7 55 88 99	Y N 55 88 99	Y N 55 88 99	.	Y N 55 88 99
h.	Y N 55 88 99	1 2 3 4 5 6 7 55 88 99	Y N 55 88 99	Y N 55 88 99	.	Y N 55 88 99
i.	Y N 55 88 99	1 2 3 4 5 6 7 55 88 99	Y N 55 88 99	Y N 55 88 99	.	Y N 55 88 99
j.	Y N 55 88 99	1 2 3 4 5 6 7 55 88 99	Y N 55 88 99	Y N 55 88 99	.	Y N 55 88 99
k.	Y N 55 88 99	1 2 3 4 5 6 7 55 88 99	Y N 55 88 99	Y N 55 88 99	.	Y N 55 88 99
l.	Y N 55 88 99	1 2 3 4 5 6 7 55 88 99	Y N 55 88 99	Y N 55 88 99	.	Y N 55 88 99
m.	Y N 55 88 99	1 2 3 4 5 6 7 55 88 99	Y N 55 88 99	Y N 55 88 99	.	Y N 55 88 99

SCHOOL COMPLETED	COMMENTS
(1) No schooling completed or kindergarten only (2) Primary or middle school (Grade 1 through 8) (3) Some high school (Grade 10 through 11) (4) High school graduate (Grade 12 or GDE) (5) Some college or technical school (6) College graduate (7) Some post-college (55) REFUSED (88) N/A *(Default Code)* (99) DON'T KNOW	

Data use only: 1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J

8283

Figure 2. Descriptive Questionnaire. (page 9 of 12)



HHID:

ROSTER: Part III

PAGE 9

Rost. #	L Hours. at School	M School outside of home	N Hours. at Other Activities	O Work Pesticides	P Work Solvents	Q IRN Assignment	R Status Change
a.	.	Y N 55 88 99	.	Y N 55 88 99	Y N 55 88 99		Y N 88
b.	.	Y N 55 88 99	.	Y N 55 88 99	Y N 55 88 99		Y N 88
c.	.	Y N 55 88 99	.	Y N 55 88 99	Y N 55 88 99		Y N 88
d.	.	Y N 55 88 99	.	Y N 55 88 99	Y N 55 88 99		Y N 88
e.	.	Y N 55 88 99	.	Y N 55 88 99	Y N 55 88 99		Y N 88
f.	.	Y N 55 88 99	.	Y N 55 88 99	Y N 55 88 99		Y N 88
g.	.	Y N 55 88 99	.	Y N 55 88 99	Y N 55 88 99		Y N 88
h.	.	Y N 55 88 99	.	Y N 55 88 99	Y N 55 88 99		Y N 88
i.	.	Y N 55 88 99	.	Y N 55 88 99	Y N 55 88 99		Y N 88
j.	.	Y N 55 88 99	.	Y N 55 88 99	Y N 55 88 99		Y N 88
k.	.	Y N 55 88 99	.	Y N 55 88 99	Y N 55 88 99		Y N 88
l.	.	Y N 55 88 99	.	Y N 55 88 99	Y N 55 88 99		Y N 88
m.	.	Y N 55 88 99	.	Y N 55 88 99	Y N 55 88 99		Y N 88

ROSTER ID	COMMENTS	ROSTER ID	COMMENTS
a.		h.	
b.		i.	
c.		j.	
d.		k.	
e.		l.	
f.		m.	
g.			

Data use only: 1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J

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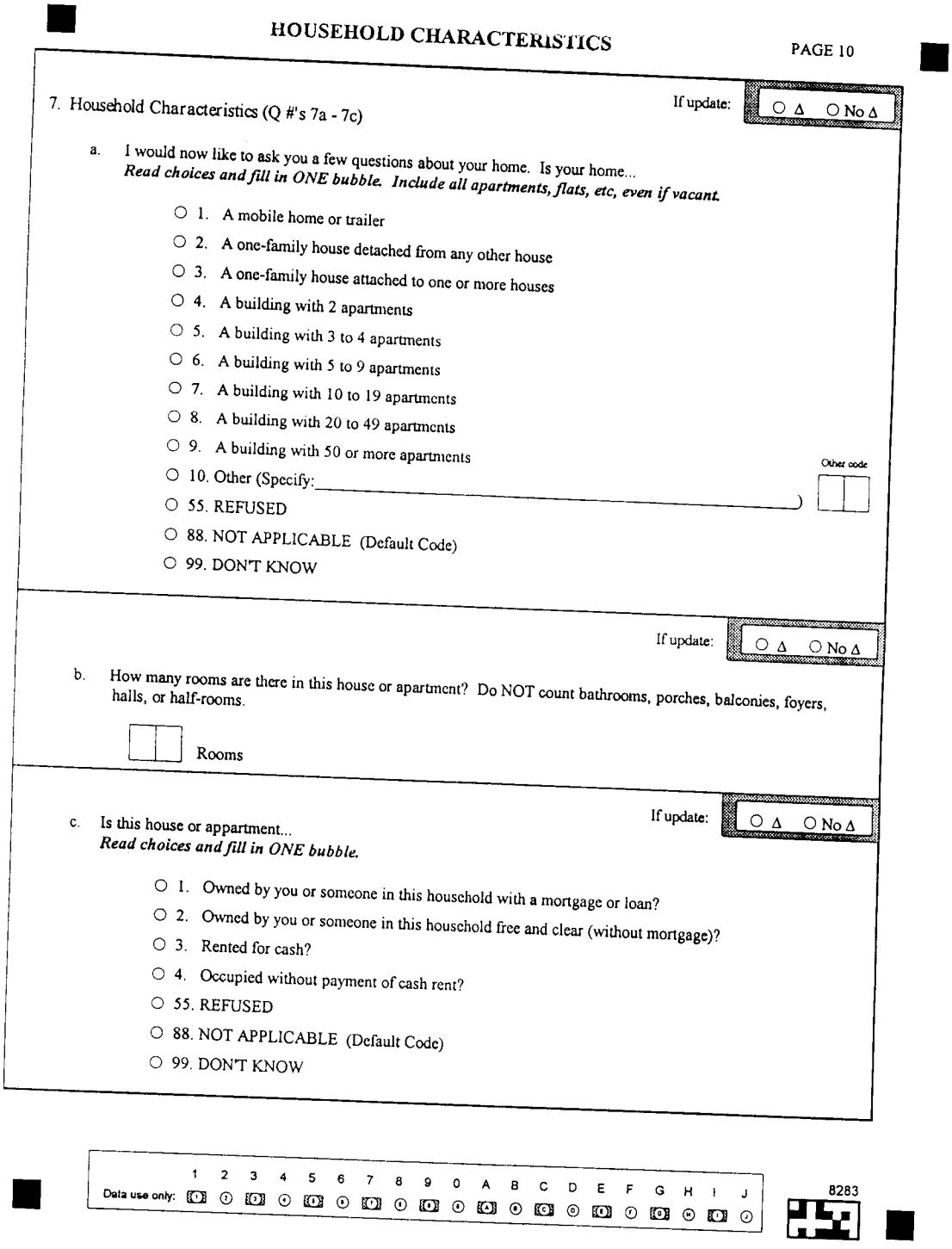
Figure 2. Descriptive Questionnaire. (page 10 of 12)



HOUSEHOLD CHARACTERISTICS

PAGE 10

7. Household Characteristics (Q #'s 7a - 7c)

If update: ○ Δ ○ No Δ

a. I would now like to ask you a few questions about your home. Is your home...
Read choices and fill in ONE bubble. Include all apartments, flats, etc, even if vacant.

- ○ 1. A mobile home or trailer
- ○ 2. A one-family house detached from any other house
- ○ 3. A one-family house attached to one or more houses
- ○ 4. A building with 2 apartments
- ○ 5. A building with 3 to 4 apartments
- ○ 6. A building with 5 to 9 apartments
- ○ 7. A building with 10 to 19 apartments
- ○ 8. A building with 20 to 49 apartments
- ○ 9. A building with 50 or more apartments
- ○ 10. Other (Specify:_____) Other code
- ○ 55. REFUSED
- ○ 88. NOT APPLICABLE (Default Code)
- ○ 99. DON'T KNOW

If update: ○ Δ ○ No Δ

b. How many rooms are there in this house or apartment? Do NOT count bathrooms, porches, balconies, foyers, halls, or half-rooms.

☐☐ Rooms

If update: ○ Δ ○ No Δ

c. Is this house or appartment...
Read choices and fill in ONE bubble.

- ○ 1. Owned by you or someone in this household with a mortgage or loan?
- ○ 2. Owned by you or someone in this household free and clear (without mortgage)?
- ○ 3. Rented for cash?
- ○ 4. Occupied without payment of cash rent?
- ○ 55. REFUSED
- ○ 88. NOT APPLICABLE (Default Code)
- ○ 99. DON'T KNOW

Data use only: 1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J

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Figure 2. Descriptive Questionnaire. (page 11 of 12)

HHID:

RESPONDENT SELECTION

PAGE 11

8. a. ***What is the roster line ID of Primary Respondent?*** ☐

b. ***Obtain full name of Primary Respondent.*** If update: ○ Δ ○ No Δ

First ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ Middle: ☐☐☐☐☐☐☐☐☐☐

Last ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

If update: ○ Δ ○ No Δ

c. ***If Primary Respondent is UNDER 18, obtain full name of Primary Respondent's legal guardian.***

○ Primary Respondent is UNDER 18 ○ N/A (Default Code)

First ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ Middle: ☐☐☐☐☐☐☐☐☐☐

Last ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

9. STAGE I ONLY!

a. Thank you for taking the time to answer our questions about your household. We would like to ask some additional questions about each individual in your home using a second questionnaire [Display BASELINE QUESTIONNAIRE]. This questionnaire asks much more detailed questions related to your potential exposure to the substances in the enviornment we are interested in. It will take approximately one hour to complete this questionnaire. Is this a good time to do this?

1. YES ---------- ***Obtain informed consent and administer BASELINE.***
2. NO ---------- ***GO TO Q # 9b.***

b. Would there be a better time to do this?

1. YES ---------- ***Schedule appt. and record below. Then GO TO Q # 10.***
2. NO ---------- ***GO TO Q # 10.***

____/____/____ AT ____:____
MO DAY YR

Comments: _____

Data use only: 1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J

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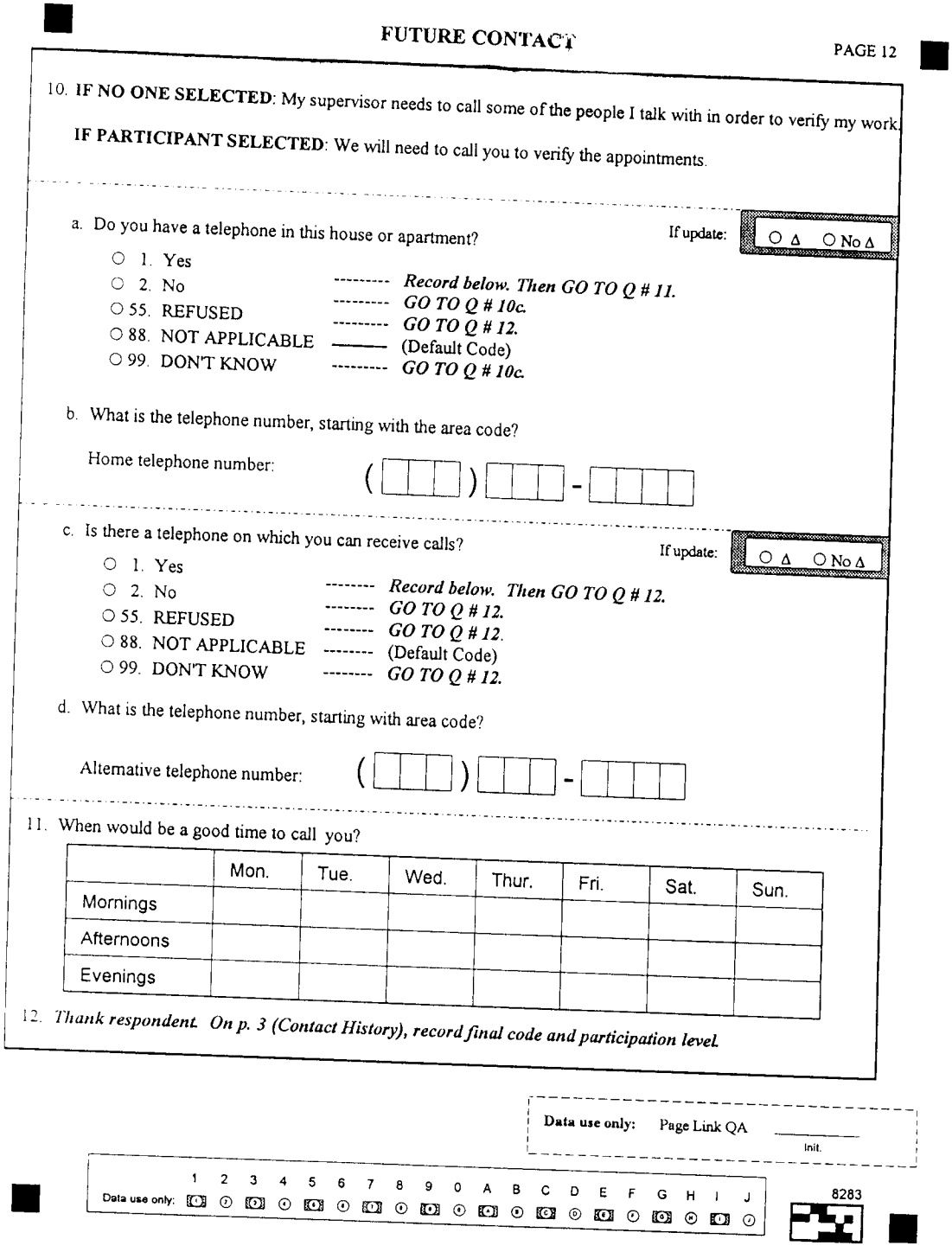
Figure 2. Descriptive Questionnaire. (page 12 of 12)



FUTURE CONTACT

PAGE 12

10. **IF NO ONE SELECTED**: My supervisor needs to call some of the people I talk with in order to verify my work.

IF PARTICIPANT SELECTED: We will need to call you to verify the appointments.

a. Do you have a telephone in this house or apartment? If update: ○ Δ ○ No Δ

○ 1. Yes	---------	*Record below. Then GO TO Q # 11.*
○ 2. No	---------	*GO TO Q # 10c.*
○ 55. REFUSED	---------	*GO TO Q # 12.*
○ 88. NOT APPLICABLE	———	(Default Code)
○ 99. DON'T KNOW	---------	*GO TO Q # 10c.*

b. What is the telephone number, starting with the area code?

Home telephone number: ( ) -

c. Is there a telephone on which you can receive calls? If update: ○ Δ ○ No Δ

○ 1. Yes	--------	*Record below. Then GO TO Q # 12.*
○ 2. No	--------	*GO TO Q # 12.*
○ 55. REFUSED	--------	*GO TO Q # 12.*
○ 88. NOT APPLICABLE	--------	(Default Code)
○ 99. DON'T KNOW	--------	*GO TO Q # 12.*

d. What is the telephone number, starting with area code?

Alternative telephone number: ( ) -

11. When would be a good time to call you?

	Mon.	Tue.	Wed.	Thur.	Fri.	Sat.	Sun.
Mornings							
Afternoons							
Evenings							

12. *Thank respondent. On p. 3 (Contact History), record final code and participation level.*

Data use only: Page Link QA _____ Init.

Data use only: 1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J

8283

Figure 3. State of Arizona HHID Prefix Table.

NHEXAS BLOCK SELECTION SUMMARY
14 February 1995

COUNTY	% STATE POP	# TRACTS	# BG	# BLK	NHEXAS HHID PREFIXES	# TRACTS CHOSEN	# BG CHOSEN	# BLK CHOSEN	# HH STAGE 1	CDPs IN SAMPLE
Apache (01)	1.7	14	65	5988	12,13	1	2	5	25	Springerville
Cochise (03)	2.7	21	85	4659	15,16,17	3	9	15	75	Bisbee, Douglas, Sierra Vista
Coconino (05)	2.6	25	117	6913	18,19	2	6	10	50	Flagstaff
Gila (07)	1.1	15	54	2609	21,23	3	8	15	75	Globe, Miami, Winkleman
Graham (09)	0.7	11	37	2112	24,25	1	2	5	25	Safford
Greenlee (11)	0.2	5	15	795	26,27	1	3	5	25	Clifton/Morenci
LaPaz (12)	0.4	6	29	2044	28,29	1	3	5	25	Parker
Maricopa (13)	57.9	466	1885	33753	31,32,34 35,36,37 38,39,41 42,43	17	52	85	425	Wickenburg, Gila Bend, Chandler, Mesa, Tempe, Phoenix, Scottsdale, Sun City, Glendale, Guadalupe, Goodyear, Gilbert, Queen Creek
Mohave (15)	2.6	34	150	10252	46,47	1	4	5	25	Kingman
Navajo (17)	2.1	25	94	6869	48,49	1	3	5	25	Showlow
Pima (19)	18.2	115	561	12368	51,52,53 54,56,57 58,59	10	32	50	250	Tucson, Marana, Sells, Ajo, Green Valley, San Xavier
Pinal (21)	3.2	24	102	6581	61,62	2	4	10	50	San Manuel, Hayden
Santa Cruz (23)	0.8	5	19	963	63,64,65 67	2	5	10	50	Nogales
Yavapai (25)	2.9	20	78	5098	68,69	2	7	10	50	Camp Verde, Prescott
Yuma (27)	2.9	24	88	2968	71,72,73	3	10	15	75	Yuma, Somerton, San Luis

P:\GIS\NHEX_SEL\STATS\nhexsel.frm

Figure 4. Sample Types with VID and Prefix Information.

Sample-ID Table

PREFIX	VID	Sample Type
11	XXX	Invalid Sample ID Prefix
12	AS1	Air Sentinel
13	H2M	Water Metals
14	H2P	Water Pesticides
15	H2V	Water VOCs
16	H2C	Water Carbaryl
17	FUD	Diet Samples
18		
19		
20	XXX	Invalid Sample ID Prefix
21	OVM	Passive VOC
22	XXX	Invalid Sample ID Prefix
23		
24		
25	PF1	Passive Formaldehyde
26	V2C	Active VOC 200
27	VOC	Actively Pumped VOC
28	V3C	Active VOC 300
29	PAH	Active Air PAH
30	XXX	Invalid Sample ID Prefix
31	FFM	Active Air PM_{10}
32	FFP	Active Air Pesticides
33	XXX	Invalid Sample ID Prefix
34	PAP	PAH of PAH/Pests Air
35	FPP	Discontinued 12/27/95
36	FUM	Diet Aliquots Metals
37	FUP	Diet Aliquots Pests.
38	FUR	Diet Return Aliquots
39	PCA	Pests of PAH/Pests Air
40	XXX	Invalid Sample ID Prefix
41	PFM	Personal Air PM_{10}
42	PFP	Personal Air Pests
43		
44	XXX	Invalid Sample ID Prefix
45	PPP	Discontinued 12/27/95
46		
47	UNS	Unknown Solid
48	UNL	Unknown Liquid
49		
50	XXX	Invalid Sample ID Prefix
51	YSC	Yard Soil
52	YSP	Yard Soil Aliquot (P)
53	FSC	Foundation Soil
54	FSP	Foundation Soil Aliquot (P)

PREFIX	VID	Sample Type
55	XXX	Invalid Sample ID Prefix
56	YSM	Yard Soil Aliquot (M)
57	FSM	Foundation Soil Aliquot (M)
58	YSH	Yard Soil Aliquot (PAH)
59	SOT	Soil Thin Film
60	XXX	Invalid Sample ID Prefix
61	BLM	Blood Metals
62	BLP	Blood Pesticides
63	BLV	Blood VOCs
64	UAC	Urine Sample
65	UAP	Urine Aliquot Pesticides
66	XXX	Invalid Sample ID Prefix
67		
68	UAT	Urine Aliquot Creatinine
69		
70	XXX	Invalid Sample ID Prefix
71	FDC	Floor Dust Composite
72	FDP	Floor Dust Aliquot Pesticides
73	FDM	Floor Dust Aliquot Metals
74	FDH	Floor Dust Aliquot PAHs
75	F25	Active Air $PM_{2.5}$
76		
77	XXX	Invalid Sample ID Prefix
78		
79		
80		
81	SWM	Sill Wipe Metals
82		
83	SWP	Sill Wipe Pesticides
84		
85		
86		
87		
88	XXX	Invalid Sample ID Prefix
89	SWT	Sill Wipe Thin Film
90	XXX	Invalid Sample ID Prefix
91	DWM	Dermal Wipe Metals
92		
93	DWP	Dermal Wipe pesticides
94		
95	HAR	Human Hair (Metals)
96		
97		
98	CAL	Calibration Standards
99	XXX	Invalid Sample ID Prefix

Figure 5. Main Menu Options for the Electronic Tracking System.

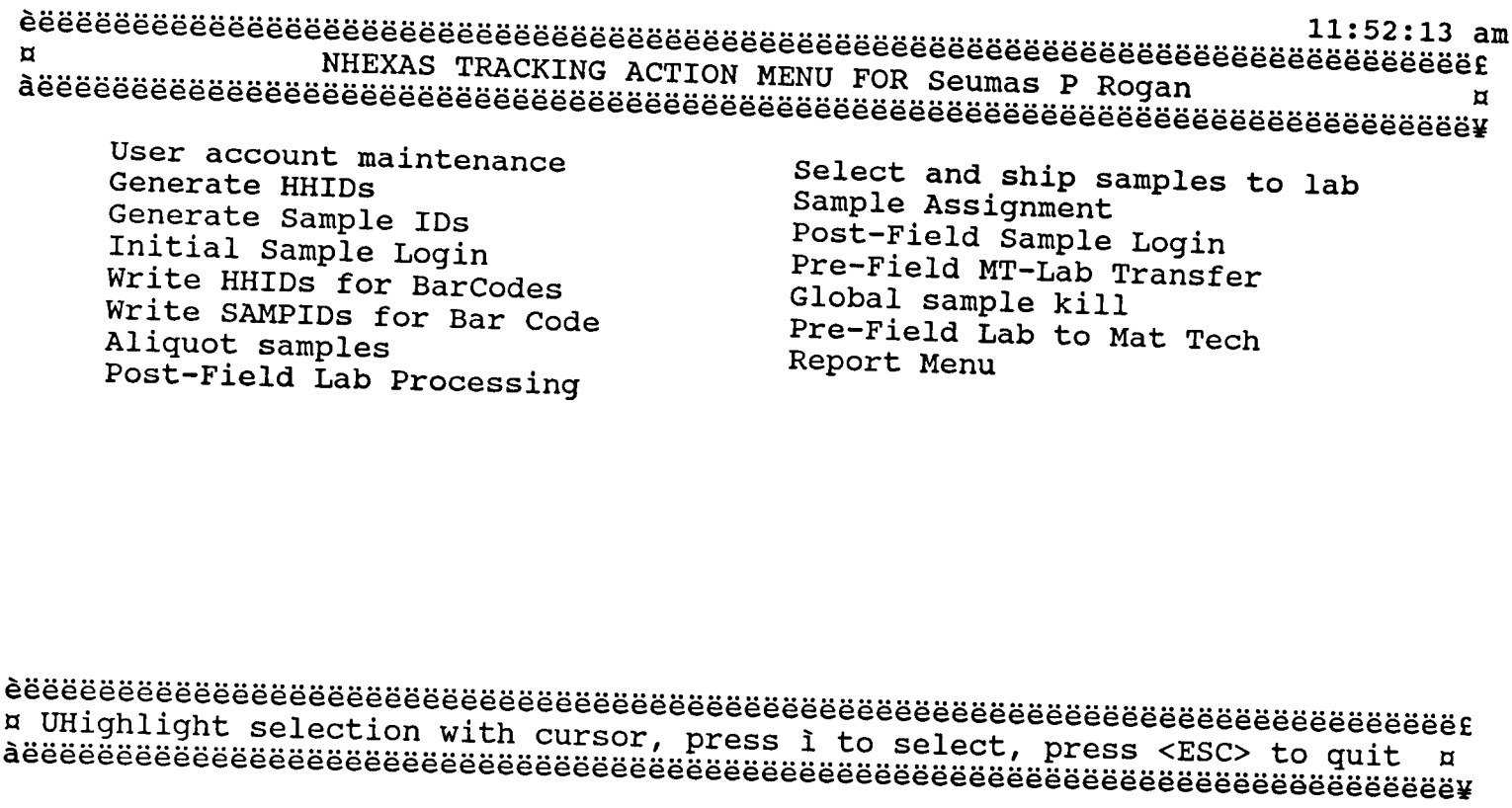


Figure 6. Strata Available (by County) for HHID Generation.

NHEXAZ POPULATION STRATA AVAILABLE

12 Apache-1	34 Maricopa-3	56 Pima-5
13 Apache-2	35 Maricopa-4	57 Pima-6
15 Cochise-1	36 Maricopa-5	58 Pima-7
16 Cochise-2	37 Maricopa-6	59 Pima-8
17 Cochise-3	38 Maricopa-7	61 Pinal-1
18 Coconino-1	39 Maricopa-8	62 Pinal-2
19 Coconino-2	41 Maricopa-9	63 Santa Cruz-1
21 Gila-1	42 Maricopa-10	64 Santa Cruz-2
23 Gila-2	43 Maricopa-11	65 Santa Cruz-3
24 Graham-1	45 Mohave-1	67 Santa Cruz-4
25 Graham-2	47 Mohave-2	68 Yavapai-1
26 Greenlee-1	48 Navajo-1	69 Yavapai-2
27 Greenlee-2	49 Navajo-2	71 Yuma-1
28 La Paz-1	51 Pima-1	72 Yuma-2
29 La Paz-2	52 Pima-2	73 Yuma-3
31 Maricopa-1	53 Pima-3	97 Field Trial in PC
32 Maricopa-2	54 Pima-4	98 Use for testing only

UHighlight selection with cursor, press ì to select, press <ESC> to quit

Figure 7. Sample of HHIDs Ready for Use in the Field.

Figure 8. **Sample-IDs Ready for Assignment to Samples and Chain of Custody Records.**

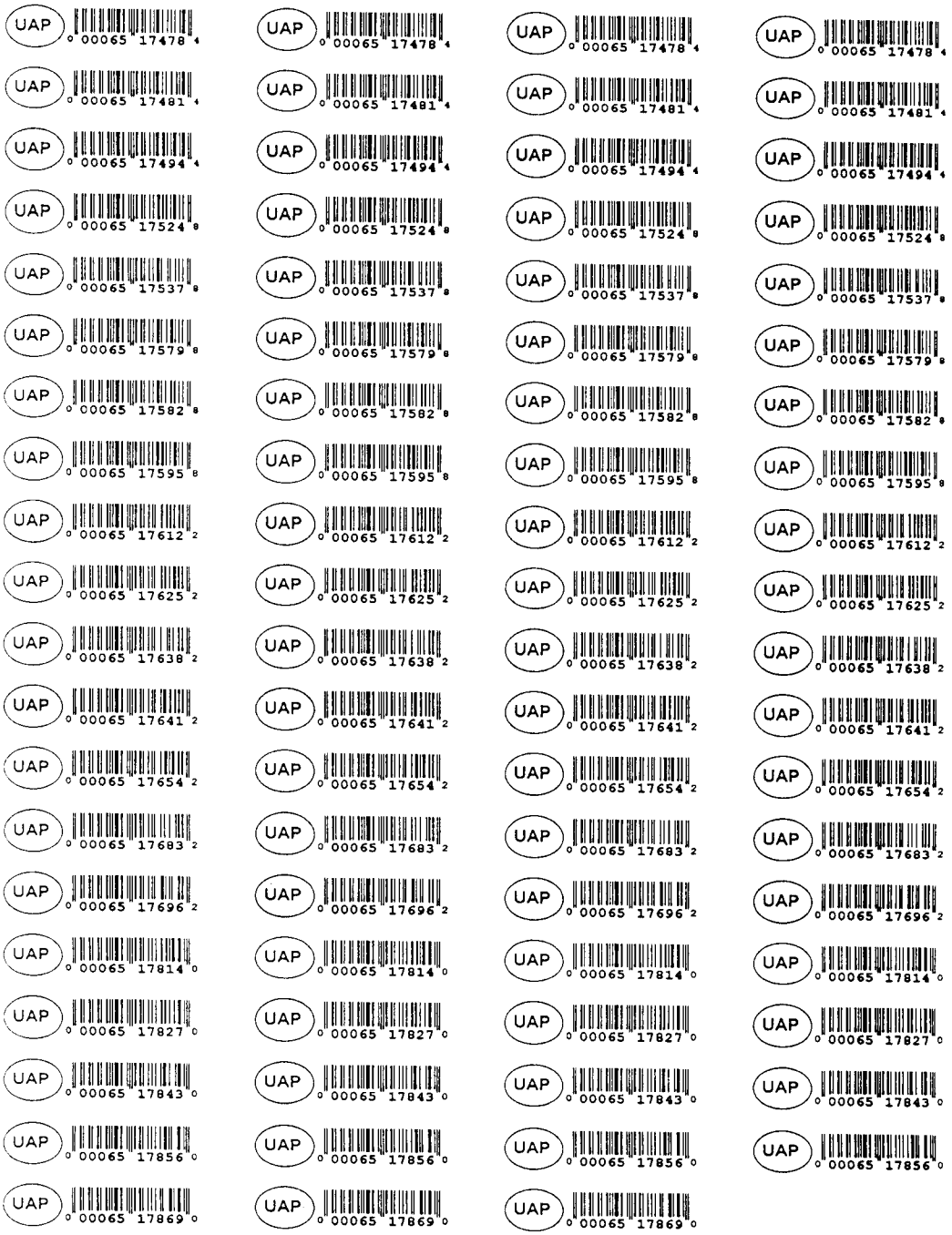


Figure 9. Random Number Table for N = 9 Household Residents

IRN RANDOM SELECTION ORDER FOR HHs WITH N = 9 ELIGIBLE RESPONDENTS

4	8	5	6	2	2	9	2	2	7
6	4	6	9	5	6	5	9	3	6
7	3	8	6	1	2	2	2	4	6
5	5	2	8	2	4	8	8	2	8
7	6	3	8	6	4	5	2	8	3
2	4	3	4	2	5	5	7	4	2
8	9	7	3	6	3	4	5	3	8
9	8	7	9	7	6	2	3	8	8
3	7	9	2	6	4	6	7	8	1
5	6	9	4	8	7	6	5	5	7
4	9	8	5	7	9	4	9	7	8
2	9	9	8	9	1	4	4	4	6
1	4	2	1	8	2	6	5	7	9
6	9	5	5	3	3	2	6	8	2
2	7	8	3	5	4	4	5	7	9
2	7	6	3	9	7	2	4	1	6
5	4	1	2	5	6	6	8	5	3
5	1	1	6	2	9	8	4	5	2
1	6	9	6	5	3	1	6	2	2
9	9	4	4	9	6	5	9	1	1
1	5	7	4	2	4	5	9	5	2
3	9	4	3	4	5	9	5	8	4
4	7	2	8	1	4	3	8	4	8
1	9	2	9	8	9	8	1	1	6
4	9	8	7	1	9	3	3	6	6
6	4	7	3	3	5	5	2	2	3
9	6	6	7	9	5	1	2	7	3
9	5	9	4	1	9	9	9	3	4
9	2	7	4	8	9	9	7	3	5
4	9	1	9	9	6	8	3	6	9

Figure 10. Confidential Home Appointment Sheet

Confidential Home Appointment Sheet

Last visit series 01 / 01 / 1996 (mo / day / year) Project ID NHEXAS

Form ID = UA - T3.0 - 1.1 HHID 123456 / A

Team Leader SR Stage # 3

Name(contact) Poly Ester P IRN Name MALACHY

Street 1435 N FRemont #128 Cross Streets etc... Park + Speedway

City TUCSON

County PimA ZIP 85719 / 4362

Ph No (520) 626 - 4226

V1 02 / 02 / 96 V2 02 / 05 / 96 V3 02 / 09 / 96 V4 __/__/__

Times: 13 : 00 14 : 30 16 : 00 __ : __

IRN #	Birth Name	Relates to IRN	Status Δ	Con-sent	Base Line	Active Diary	Follow Up	Diet Diary	Diet F/U	Active Pump	Derm wipe	Urine	Blood	Diet samples
[01]	MALAChy (1988)	INdex	Y N	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
[02]	Poly (1960)	mother	Y N	[X]	[X]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[03]	FRANK (1955)	father	Y N	[X]	[X]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[04]	DouG (1980)	brother	Y N	[ ]	[X]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[05]	ShAmie (1984)	brother	Y N	[ ]	[X]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[ ]			Y N	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[ ]			Y N	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[ ]			Y N	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[ ]			Y N	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[ ]			Y N	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[ ]			Y N	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

PID Indoors	[✓]	Carbotrap In	[✓]	Thin Film Soil	[✓]		[ ]
PID Outdoors	[✓]	Carbotrap Out	[✓]	Thin Film Sill	[✓]		[ ]
Sentinel Hi-Vol	[ ]	PM In	[✓]	Dx QX	[✓]		[ ]
H2O (M.P.VOC.CARB)	[✓]	Pm Out	[✓]	Tech Qx	[✓]		[ ]
OVM In	[✓]	Yard Soil	[✓]		[ ]		[ ]
OVM Out	[✓]	Foundation Soil	[✓]		[ ]		[ ]
PF-1 In	[✓]	Floor Dust	[✓]		[ ]		[ ]
PF-1 Out	[✓]	Sill Wipes	[✓]		[ ]		[ ]

MAC: Home Appt Sheet

Census:

Tract: [ ] [6] [3] [7] [8] BG: [2] BLK: [0] [2] [0] [1]