The Arizona Border Study

An Extension of the
Arizona National Human Exposure Assessment Survey (NHEXAS)Study
Sponsored by the Environmental Health Workgroup of the Border XXI Program

Quality Systems and Implementation Plan for Human Exposure Assessment

The University of Arizona
Tucson, Arizona 85721

Cooperative Agreement CR 824719

Standard Operating Procedure **SOP-UA-F-2.1**

Title: Preparation of Field Bucket and Equipment Assignment

Source: The University of Arizona

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Office of Research and Development
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Title: **PREPARATION OF FIELD BUCKET AND EQUIPMENT ASSIGNMENT**

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Form TP-1

Preparation of Field Bucket and Equipment Assignment

1.0 Purpose and Applicability

This SOP describes the preparation and assembly of materials and samplers to go into the field for use in the NHEXAS Arizona Project, AZ Border Project (Border AZ) and other Health and Environment projects.

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 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.

2.3 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).

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

2.5 FIELD KIT = A sampling tool-box containing appropriate sample collection and storage utensils.

2.6 FIELD COORDINATOR = The employee of the research project who supervises field data collection and operations. The Field Coordinator collates individual data into HH packets, and upon completion of all visits, sampling, and QA checks, forwards the packet to the Data Coordinator.

2.7 FORM, PHYSICAL = The paper or "hard copy" original of the data which is collected in

the field. Form is also a generic term for any piece of paper data, such as records and check sheets, questionnaires, etc., which are collected for analysis.

2.8 HOUSEHOLD(HH) = The residence occupied by study respondents.

2.9 HOUSEHOLD IDENTIFICATION NUMBER(HHID) = A unique number and character combination which is assigned to each respondent household for identification purposes. This number must be recorded on all data (forms, samples, questionnaires and correspondence) generated by the household.

2.10 MATERIALS TECHNICIAN (Materials Tech) = The employee of the research project who is responsible for assembling and assigning field forms, questionnaires and equipment for field use.

2.11 N/A = Not Applicable.

2.12 NHEXAS Arizona = Acronym for National Human Exposure Assessment Survey, a research project conducted in Arizona by the University of Arizona / Battelle / Illinois Institute of Technology Consortium.

2.13 PACKET = This is a large (9.5" x 12.5") household specific plastic envelope which holds the physical "hardcopy" questionnaires and field sampling forms collected from a study household.

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 SAMPLE = That piece of physical data which is collected from the study participants for the purpose of scientific analysis.

2.17 TEAM LEADER = The member of the field team who is primarily responsible for respondent contact, data collection, field form and questionnaire completion, and site QC checks of all data.

2.18 TEAM MEMBER = The member of a field team responsible for assisting the Team Leader in the collection of data and quality control checks in the field.

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 aliquots.

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

3.0 References

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

4.0 Discussion

To complete field sampling, field teams must have materials appropriate to the task. Material falls into 2 categories or levels : (1) household and (2) individual. The materials that a field crew would need to complete sampling at any given location also vary by stage. Household specific materials cover items used only in a given residence (i.e. labels with the specific preprinted HHID). Stage specific material includes certain questionnaires, field forms, and samplers associated with required sampling for a given stage (see Fig. 3). Figure 6 provides an overview of the number of samples to be sampled by a given stage. It is provided as a background to the NHEXAS Field preparation.

5.0 Responsibilities

5.1 The Field Coordinator is responsible for:

(a) Co-management of the Materials Technician employee with the Lab Supervisor,
(b) Training the Materials Technician,
(c) Assigning field related work tasks to the Materials Technician,
(d) Oversight of Materials Technician / Field Team interaction,
(e) Providing the Materials Technician with a Confidential Home Appointment Sheet (Fig.2) specifying HH sampling needs at least three days before the first HH visit in any given stage.

5.2 The Lab Supervisor is responsible for:

(a) Co-management of the Materials Technician employee with the Field Coordinator,
(b) Training the Materials Technician.

5.3 The Team Leader is responsible for:

(a) Accepting the HH Bucket from the Materials Technician and verifying that all forms, questionnaires and sampling materials are present before the first visit to the HH.
(b) Accepting custody of samples and samplers to be used in the field and documenting the transfer on the chain of custody record as appropriate (Fig. 1).
(c) Returning used equipment/samplers to the Materials Technician for cleaning/calibration and identifying any malfunctioning equipment as appropriate (see UA-G-2.X).
(d) Returning spent HH Buckets to Materials Technician within 24 hours of the final household visit to any given HH for that sampling cycle/stage.

5.4 The Materials Technician is responsible for:

(a) Completing work tasks assigned by the Field Coordinator and the Lab Supervisor.
(b) Assembling paperwork and assigning equipment for sampling, based on the sampling demands for the following week.
(c) Receiving, cleaning, and recycling spent HH buckets for re-use/reassignment.
(d) Receiving used samplers/equipment and returning them to the appropriate laboratory personnel for calibration or repair.
(e) Receiving calibrated equipment from appropriate lab personnel and assigning them to the field for sampling.
(f) Removing any labels from unused forms and recycling them for use in another home as appropriate.
(g) Receiving the Home Appointment Sheet (Fig. 2) from the Field Coordinator and preparing questionnaires, forms, samples and samplers appropriate for any given stage (see Fig. 3) for use in the field.
(h) Receiving all unexposed sampling materials and field implementation supplies in accordance with SOP UA-G-5.X.
(i) Packing and shipping all exposed samples to appropriate laboratories for analysis.
(j) Performing a weekly shipment of exposed samples via overnight mail in accordance with sample shipping requirements as outlined in specific SOPs (see Fig. 8).

6.0 Materials and Equipment

a) Computer on local area computer network.
b) Printer
c) Removable Laser Printer labels for HHID and Sample-ID printing.
d) HH Buckets
e) All individual (IRN) and Household (HH) questionnaires and forms

f) All calibrated field equipment and samplers.
g) Unexposed sample containers for assignment to field
h) Home Appointment Sheet
i) Shipping boxes, dry ice, blue ice, Styrofoam packing materials.

7.0 Procedure (see Fig. 9)

7.1 Preparation

7.1.1 Site Selection Criteria - N/A

7.1.2 Reagents - N/A

7.1.3 Standards and Blanks

Ten percent of all samples sent to the field will be flagged and serve as quality assurance samples. These QA samples may be blanks, spikes or duplicate collection samplers. Field Blank selection from a received batch may, if not previously flagged by the shipping laboratory personnel, be performed by the Materials Technician (see UA-G-5.X). The selection will be randomized by sample lots. The Blank will be labeled clearly and assigned to a randomly chosen Household.

7.1.4 Samples

The Materials Technician uses a computer to generate a certain number of labels for each sample. Currently, four labels with the same Sample-ID are generated for each sample. These Sample-IDs are generated by the Project Tracking System. The use of writing recognition software when scanning field forms and questionnaires will influence the number of labels required per household per stage. Label requirements will be adjusted as writing recognition software and field form scanning capabilities change.

7.2 Procedure

7.2.1 Blanks Deployed

Samples are assigned to a Household by the Materials Technician. Blank samples are assigned with non-blank samples as per appropriate protocol. Since the scheduling of HH visits and Stage sequencing is essentially random and blind to the Materials Technician, the assignment of samples and blanks is essentially random. Lab Blanks are not assigned to the field, but are stored under the same conditions as other samples in their batch or preparation lot. They are subsequently analyzed with Field Blanks and genuine field

samples.

7.2.2 Preparing forms and questionnaires

When the Field Team Leader schedules a study home for a visit series, a Confidential Home Appointment Sheet is generated (Fig. 2). This field sheet will detail the date and time of the scheduled start visit, and the stage number for the particular visit series. IRNs, and first names recorded on this field sheet will allow the Materials Technician to determine the number of people in the HH, and thus the number of person-specific sampling forms he/she must prepare.

The Materials Technician then refers to Figure 3, NHEXAS AZ (or other project) Household Bucket Preparation to determine the number of forms and questionnaires to be included in each HH Bucket by sample stage and number of respondents in each HH.

(a) Gather the Survey's forms:

1. General information sheets (one per HH).
2. Consent/assent (for minors) sheets (one per person).
3. Descriptive Qx (one per HH).
4. Baseline, Time Activity, Follow-up, Food Diary and Food Follow-up (one per person).
5. Technician Qx (one per HH).
6. Field Data Collection Sheets: as appropriate to study stage (see Fig. 3).

(b) Place paper HHID labels on the upper right hand corner of each form and on the front outer cover of each questionnaire.
(c) Get an unused HH bucket and 3 ring HH notebook.
(d) Label the bucket and notebook with a removable HH label.
(e) Place the sampling stage (1,2 or 3) on the outside of the HH bucket by selecting the appropriate 3x5 stage marker in the display pouch.
(f) Assemble forms into the notebook binder in the order that they will be used by the Team Members by consulting the relative timing of sample collection: Stages 1-3 (Figure 4).

7.2.3 Preparing Samplers and Samples

(a) Gather the appropriate sampling kits and sample containers
(b) Record the assignment of a sample or sampler to a HH in the Tracking System and label each with the appropriate HHID.
(c) Be certain to check all expiration dates on samples before assignment. Samples

must have at least 2 weeks of valid 'life' remaining from the date of the first visit to qualify for assignment and use.

(d) Be certain that only calibrated samplers/sampling devices are assigned to the field.

(e) Verify correct sample pre-field storage conditions. Annotate sample packaging with assigned HHID and place in the "Pre-Field" portion of the storage unit (See Figure 5).

(f) Samples which may be held at room temperature before field use may be place in the appropriate HH Bucket.

7.2.4 HH bucket

(a) Place all questionnaires and data sheets in the HH 3-ring notebook. Return the Home Appointment Sheet to the Field Coordinator when the bucket, equipment and samplers have been prepared and assigned for field use.

(b) Place all sample kits to be used in the bucket. If a sample kit has special pre-field storage conditions indicate where that sampler is stored so the Team Leader may collect it before the HH visit. Refer to Figure 5 : Pre- and Post- Field Sample Handling for details.

7.2.5 Returning from the field

(a) The Team Leader will notify the Field Coordinator of their return from the field and will transfer custody of samples to the Field Coordinator or delegate. After QA check and Tracking System documentation, the samples collected will be released to the Materials Technician or Lab Supervisor for shipment and/or analysis.

(b) The Materials Technician will check-in used sampling equipment to the Tracking System and forward used equipment to the appropriate storage area for recalibration, repair, or reassignment as appropriate.

(c) The Materials Technician will recycle unused sampling kits whenever possible after documenting their return in the Tracking System.

(d) The Materials Technician will deliver any samples or paperwork to the Field Coordinator upon discovery of an unsubmitted document when 'tearing down' and reassigning HH buckets and 3-Ring notebooks.

7.3 Calculations

The Materials Technician will verify the 'life' of any sample before assignment and insure that no sample is assigned to the field where less than two weeks remain between the first visit in the household and the expiration date on the sampler.

7.4 Quality Control

7.4.1 Tolerance Limits

Proper documentation of all samplers, field samples, and questionnaires will be achieved. There can only be zero tolerance of deviation from protocol and careless performance of duty. The weekly shipment of samples to cooperating laboratories is also vital. Many samples must be analyzed within days of collection. Oversight or carelessness will not be tolerated on the part of any staff member.

7.4.2 Detection Limits - N/A

7.4.3 Corrective Actions

All samples and paperwork should have been delivered to the Project Field Coordinator by each Team Leader before the Materials Technician receives the spent HH bucket. Discovery of any unsubmitted material is a failure of the Team Leader and should be reported to the project Field Coordinator immediately. Apparent mis-labeling problems detected in the field or by the Materials Technician before or after field visits may be corrected when appropriate and in accordance with SOP #UA-C-2.X.

8.0 Records

8.1 Chain of Custody Record (Figure 1).

8.1.1 This Record (Fig.1) will serve as the primary record of sample custody after collection in the field. The Team Leader and the collector are responsible for the thorough completion of this form. The Materials Technician must annotate the form for assignment to the field and when shipping for analysis.

8.1.2 The completed original Chain of Custody Record will remain with the data sample at all times.

8.2 Confidential Home Appointment Sheet (Figure 2).

8.2.1 This Field Sheet is created by the Field Coordinator. It is given to the Materials Technician so that equipment, samples and supplies may be prepared for sampling.

8.3 HH Bucket Preparation (Figure 3) for NHEXAS AZ, BORDER AZ or other Health and Environment project HH bucket preparation.

8.3.1 This form outlines the number of forms and questionnaires required for each HH by sampling stage.

8.4 Relative Timing of Sample Collection: Stages 1-3 (Figure 4).

8.4.1 This diagram displays the field implementation schedule by stage for the NHEXAS AZ Research Project, AZ Border Project, or other Health and Environment projects. The Materials Technician will refer to this form when filing questionnaires and field forms into the HH 3-Ring binder. All Field Team Members may refer to this figure to implement field procedures according to schedule.

8.5 Pre- and Post- Field Sample Handling (Figure 5).

8.5.1 This form is used by the Materials Technician to determine which samples may be safely stored in the HH bucket prior to field implementation, and which samples must be stored under special conditions before implementation. When the sample requires special storage, it will be labeled with the HHID and secured in the proper environment pending field use. All Team Members will refer to this form to ensure proper sample handling at all times in order to maintain sample integrity.

8.6 Collection Summary (Figure 6), for NHEXAS AZ, BORDER AZ or other Health and Environment projects.

8.6.1 This matrix outlines the sampling requirements by stage for the NHEXAS AZ, BORDER AZ, or other Health and Environment research projects.

8.7 Field Notes and Trouble Shooting Guide (Figure 7).

8.8 Shipment Log (Figure 8).

8.8.1 This form documents the shipment of samples from the NHEXAS AZ, BORDER AZ or other Health and Environment research projects to a pre-determined analysis site. In addition, the field form and chain of custody is shipped and recorded for each sample. The original copy of the chain of custody record remains with its respective sample at all times.

8.9 Sample Flow Charts (Figure 9).

8.9.1 These flow diagrams outline the individuals handling samples, and the flow or process of sample transfer. Sample integrity is maintained if a standard procedure for the handling and processing of each sample is followed.

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]		__/__/__	__:__	
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[Rel] or [Rec]		__/__/__	__:__	
[Rel] or [Rec]		__/__/__	__:__	
[Rel] or [Rec]		__/__/__	__:__	

FORM = UA-G4.0 - 1.2

Attach Additional Pages as Necessary

Figure 2. Confidential Home Appointment Sheet.

Confidential Home Appointment Sheet

Last visit series 01 / 01 / 1996 (mo day year) Project ID NHEXAS	Name(contact) Poly Ester P.IRN Name MALACHY
Form ID = UA - T3.0 - 1.1 HHID 123456 / A	Street 1435 N Fremont #128 Cross Streets etc..... Park + Speedway
Team Leader SR Stage # 3	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	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

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: 6378 BG: 2 BLK: 0201

Figure 3. BORDER AZ HH Bucket Preparation.

Household Bucket Preparation By Stage

Item	Stage 1	Stage 2	Stage 3	Notes
Questionnaires				
Descriptive Qx*	1	1	1	per household
Consent Form	0	1	1	per person
Baseline Qx*	0	1	1	per person
Time Activity Qx*	0	1	1	per person
Follow-Up Qx*	0	0	1	per person
4 day Diet Diary	0	1	1	per person
24 hr Food Diary	0	0	1	per person
Follow-Up Supp.	0	0	1	per person
Technician Qx*	0	1	1	per household
Pesticides Inventory	0	0	1	per household
Sampling Summary	0	1	1	per household
Samples and Associated Field Forms				
Floor Dust	0	1	1	per household
Yard Soil	0	1	1	per household
Water Metals	0	0	up to 3	per household
Water Pesticides	0	0	up to 3	per household
Water VOCs	0	0	up to 3	per household
Dermal Wipe	0	0	2	Metals & Pests
Urine Collection	0	0	1	Metals & Pests
Blood Collection	0	0	1	Metals & VOCs
Passive VOC	0	0	2	In & Out
$PM_{10} + PM_{2.5}$	0	0	2	In & Out
PM Pesticides	0	0	1	In Only
Active PAH	0	0	2	In & Out
Surface Dust	0	0	1	per household
Food / Diet	0	0	1	per household
Real Time PAH	0	0	1	per household
Active VOC	0	0	2	In & Out
SPMD	0	0	2	In & Out

* **'Qx' is an abbreviation for 'Questionnaire'**

Figure 4. Relative Timing of Sample Collection: Stages 1-3 (page 1 of 3).

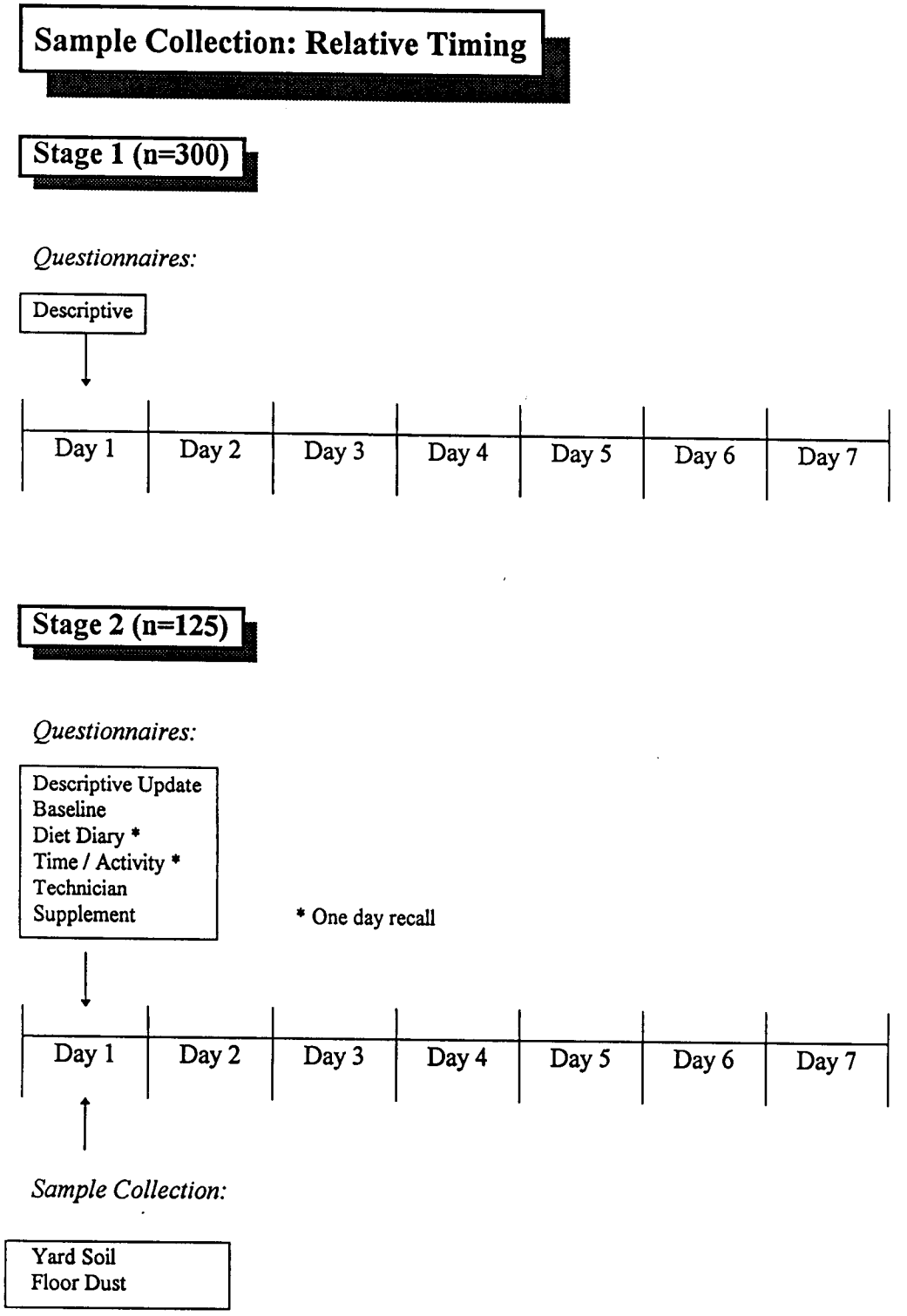
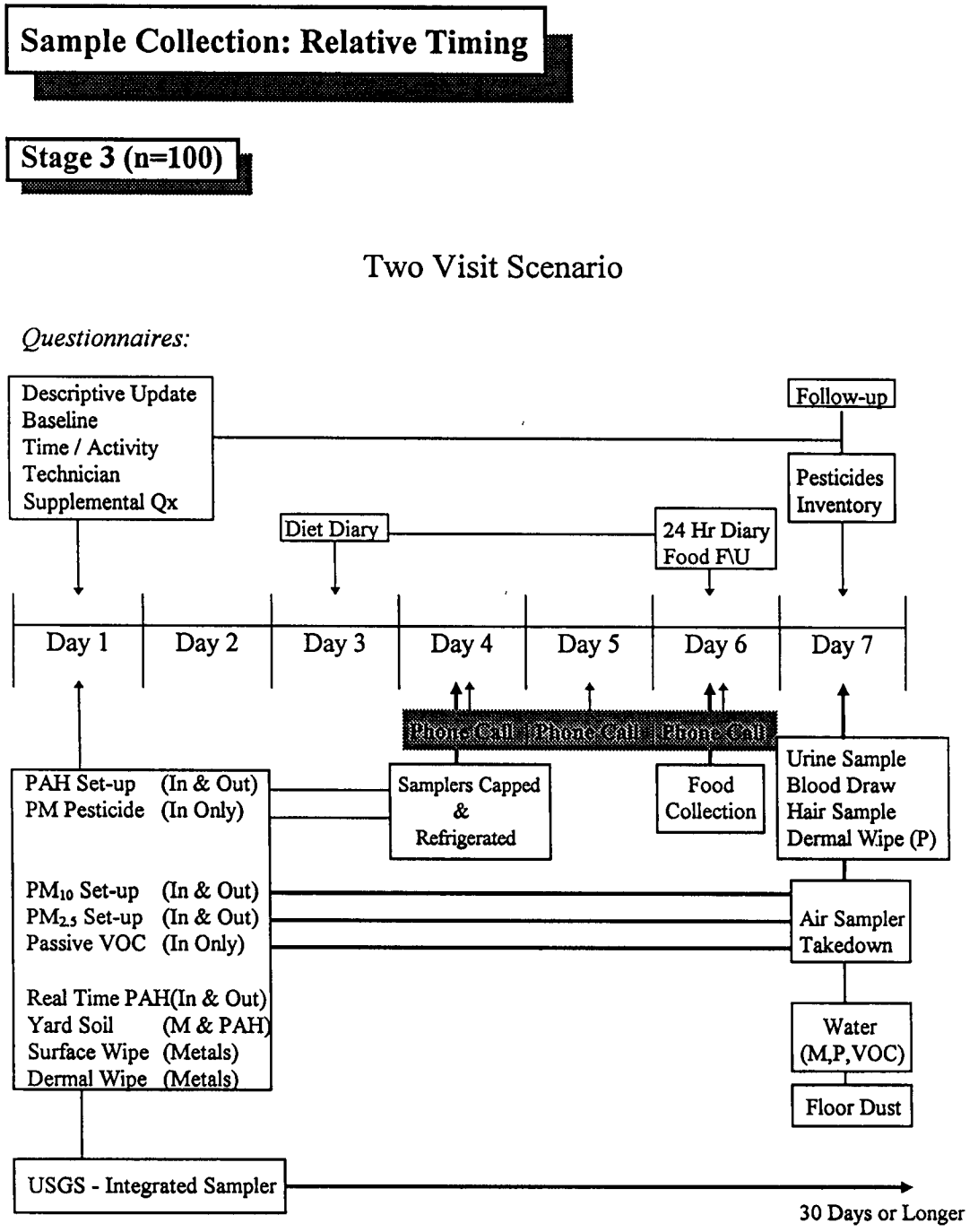
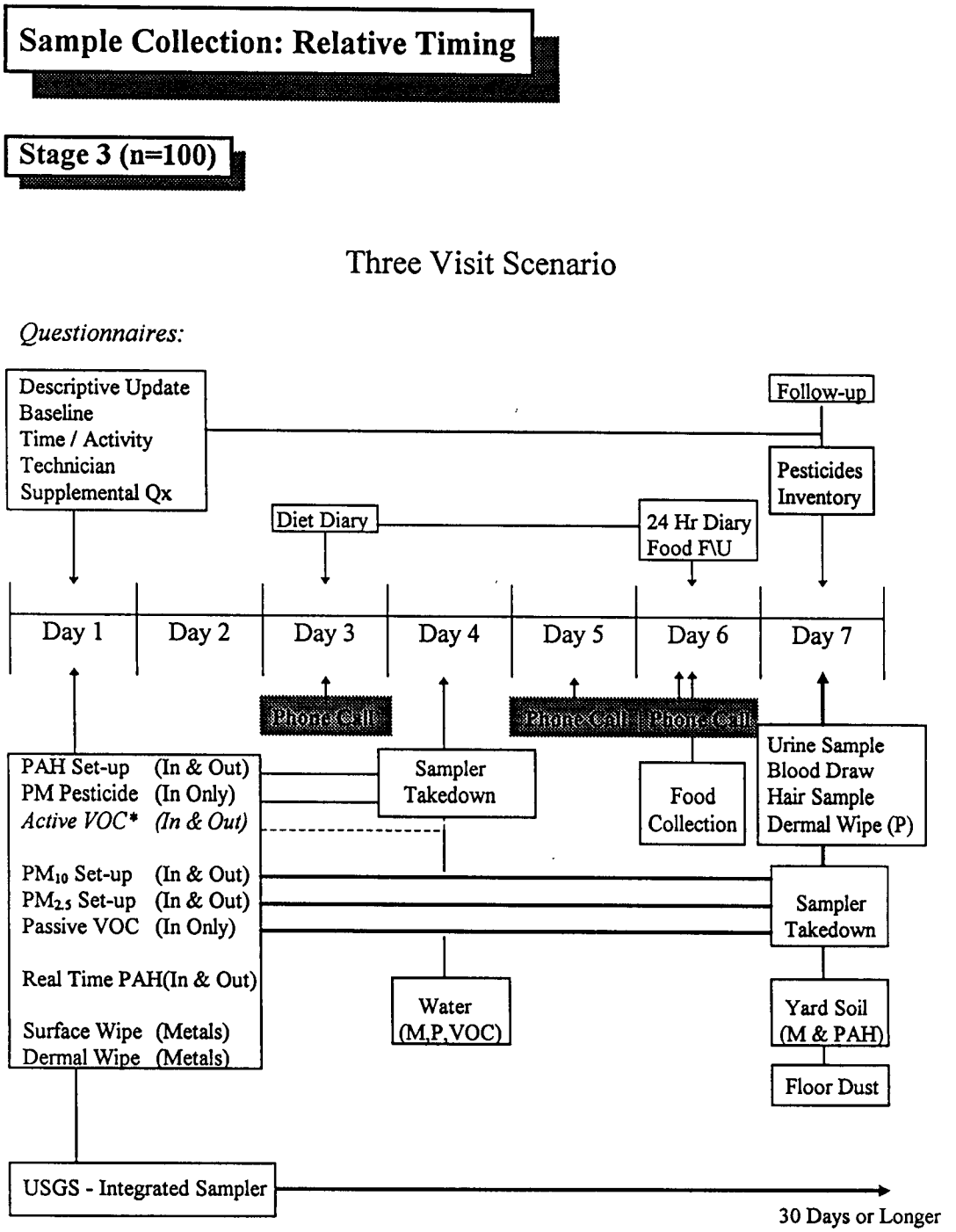


Figure 4. Relative Timing of Sample Collection: Stages 1-3 (page 2 of 3).



* Active VOC is collected in a subset of 25 homes only

Figure 4. Relative Timing of Sample Collection: Stages 1-3 (page 3 of 3).



* Active VOC is collected in a subset of 25 homes only

Figure 5. Pre- and Post-Field Sample Handling.

TYPE	PRE-FIELD		POST-FIELD		SHIPMENT
	time limit	temperature	time limit	temperature	temperature
Water	none	rt*	1 week	4°C	Blue Ice
Food	none	rt*	1 week	4°C	Blue Ice
OVM	78 weeks	rt*	3 weeks	4°C	Blue Ice
CarboTrap	2 weeks	4°C	1 week	4°C	Blue Ice
PM Metals	none	rt*	none	rt*	Blue Ice
PM Pests.	none	- 20°C	6 weeks	- 20°C	Blue Ice
Active PAH	4 weeks	4°C	2 weeks	4°C	Blue Ice
Soil (Metals)	none	rt*	none	- 20°C	Blue Ice
Floor Dust	none	rt*	6 weeks	- 20°C	Blue Ice
Blood	none	rt*	1 week	4°C	Blue Ice
Urine	none	rt*	1 week	- 20°C	Dry Ice
Dermal Wipes	none	rt*	6 weeks	- 20°C	Blue Ice
Surface Wipes	none	rt*	6 weeks	- 20°C	Blue Ice

rt* is an abbreviation for 'room temperature'.

Figure 6. BORDER AZ Collection Summary.

Number of Samples By Stage

	Stage 1	Stage 2	Stage 3	Comments
Descriptive Qx*	300	200	100	
Consent Form	0	200	100	
Baseline Qx*	0	200	100	
Time Activity Qx*	0	200	100	
Follow-Up Qx*	0	0	100	
4 day Diet Diary	0	200	100	
24 hr Food Diary	0	0	100	
Follow-Up Supp.	0	200	100	
Technician Qx*	0	200	100	
Pesticides Inventory	0	200	100	
Sampling Summary	0	200	100	
Floor Dust	0	200	100	
Yard Soil	0	200	100	
Water Metals	0	0	100 - 300	up to 3 sources sampled
Water Pesticides	0	0	100 - 300	up to 3 sources sampled
Water VOCs	0	0	100 -300	up to 3 sources sampled
Dermal Wipe	0	0	200	100 Metals & 100 Pesticides
Urine Collection	0	0	100	
Blood Collection	0	0	100	
Passive VOC	0	0	100	
$PM_{10} + PM_{2.5}$	0	0	400	200 PM_{10} & 200 $PM_{2.5}$
PM Pesticides	0	0	100	
Active PAH	0	0	200	200 In & 100 Out
Surface Dust	0	0	100	
Food / Diet	0	0	100	
Real Time PAH	0	0	100	
Active VOC	0	0	50	
SPMD	0	0	X	

Figure 7. Field Notes and Trouble Shooting Guide.

No field notes or Troubleshooting guides are currently on record for UA-F-2.1. Additions will be appended and the SOP reviewed and updated in accordance with UA-G-1.X as appropriate.

Figure 8. Shipment Log

NHEXAS Az SHIPMENT LOG

Shipment Date_____/_____/_____ Destination_____ Shipment prepared by [_____]
(mo / day / yr)

Recipient Notified of Shipment by [_____] on _____/_____/_____ comments_____
(mo / day / yr)

note: FF = field form included with shipment and CoC = chain of custody record verified and present

SAMPLE ID#	TYPE	FF	CoC	COMMENTS

FORM ID = UA-F2.0-1.0

Figure 9. Sample Flow Charts (page 1 of 6)

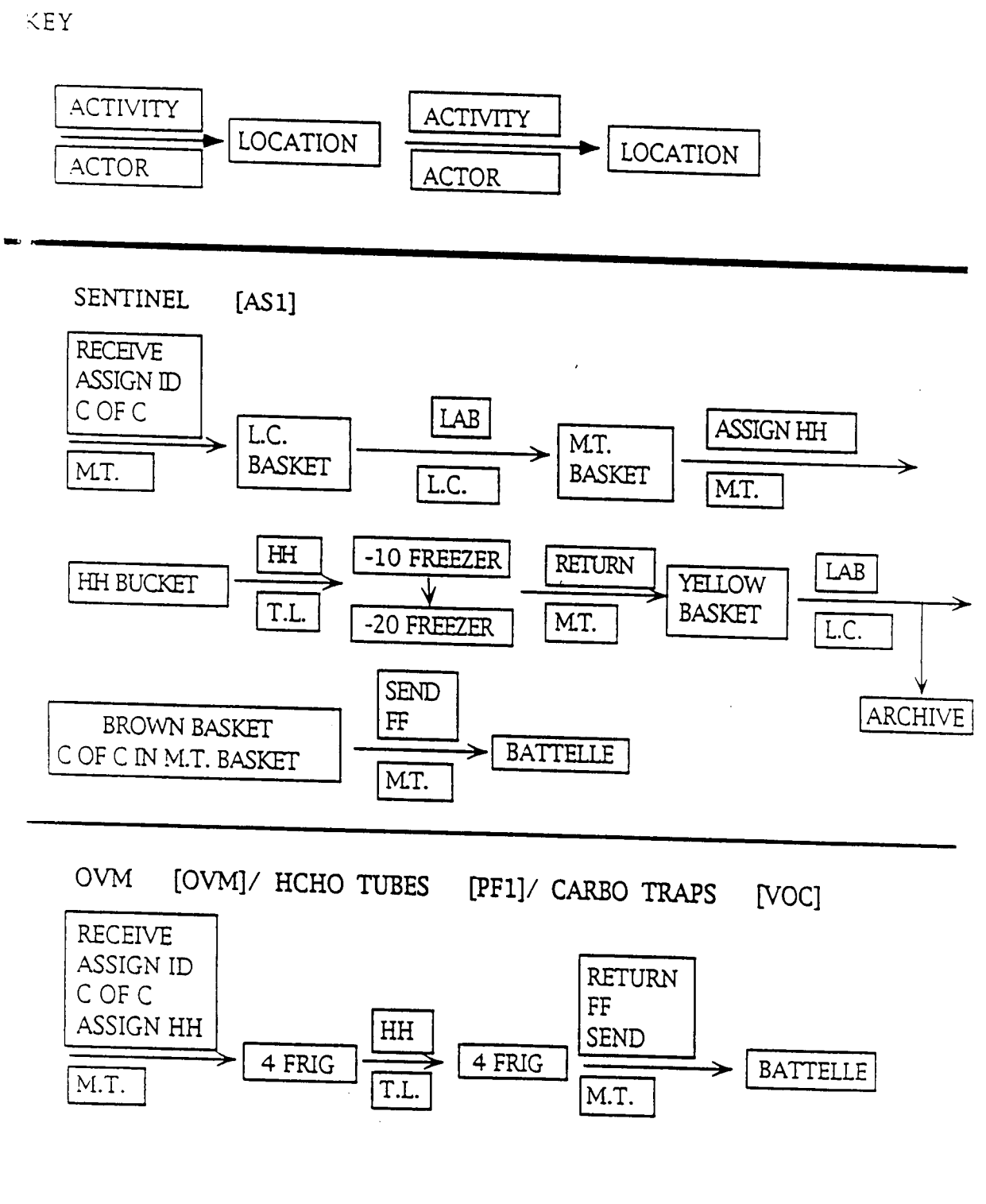


Figure 9. Sample Flow Charts (page 2 of 6)

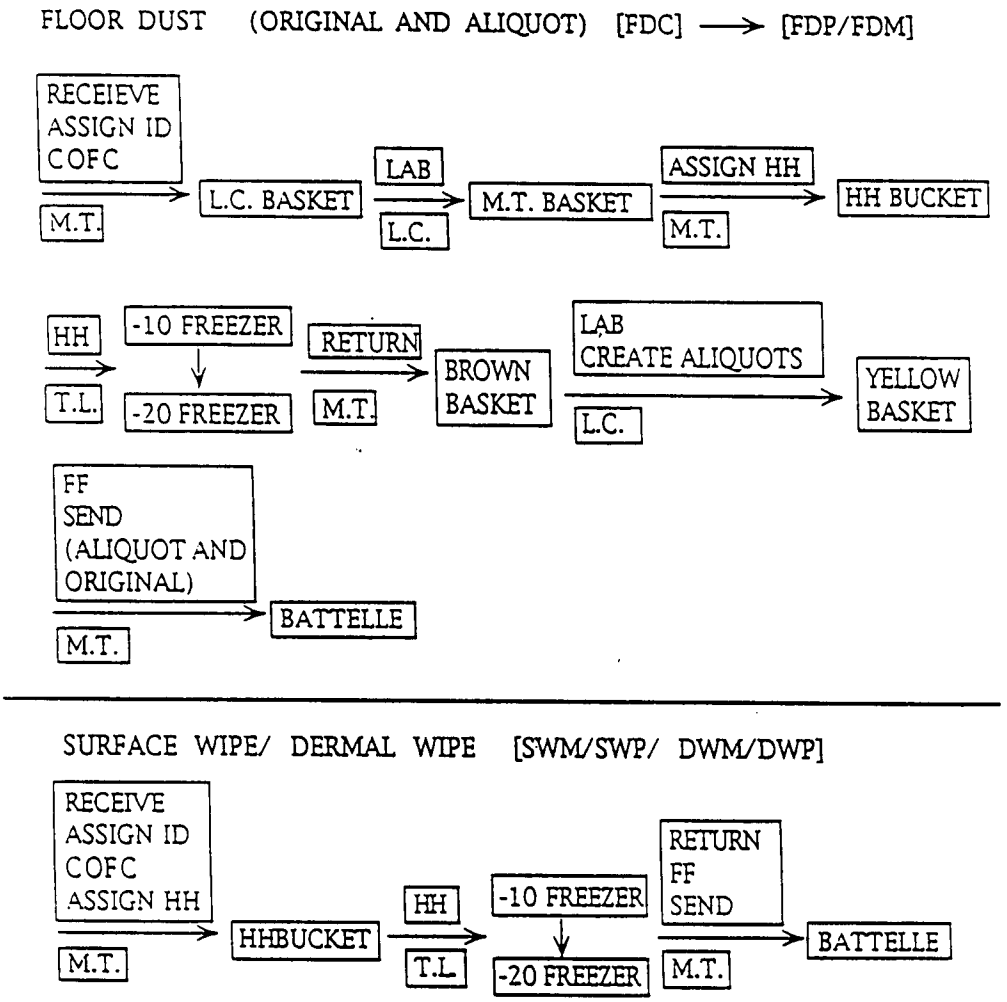


Figure 9. Sample Flow Charts (page 3 of 6)

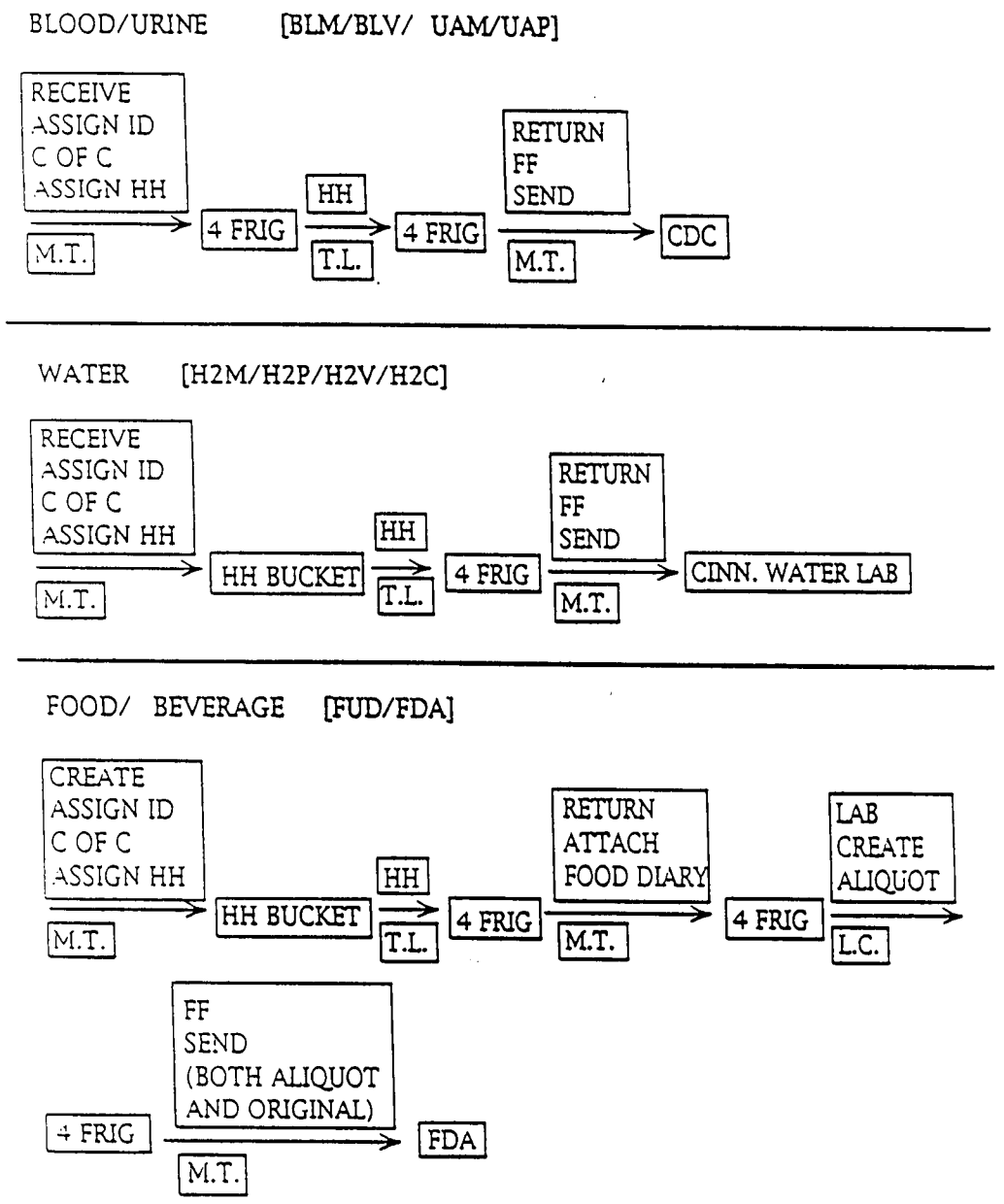


Figure 9. Sample Flow Charts (page 4 of 6)

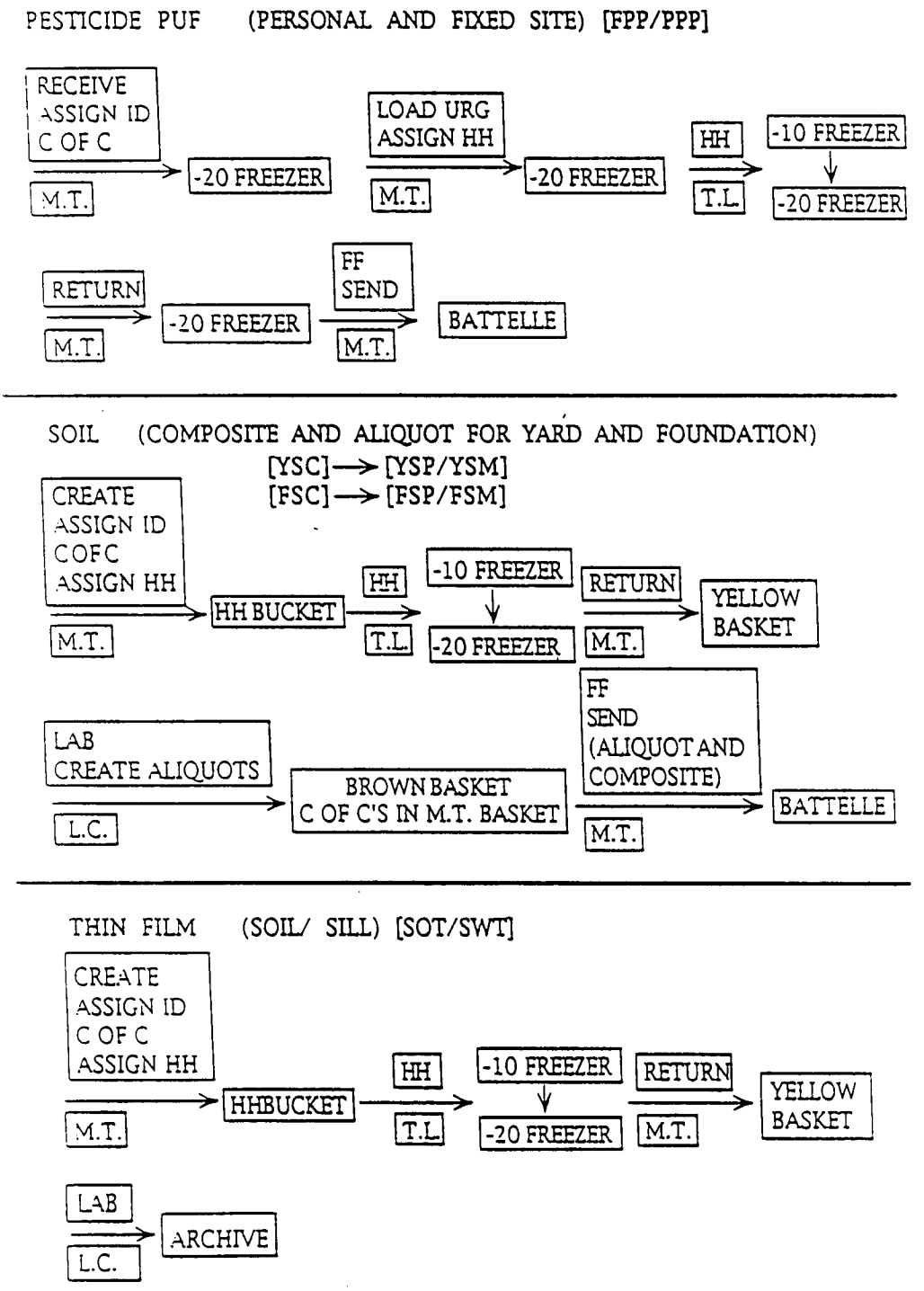


Figure 9. Sample Flow Charts (page 5 of 6)

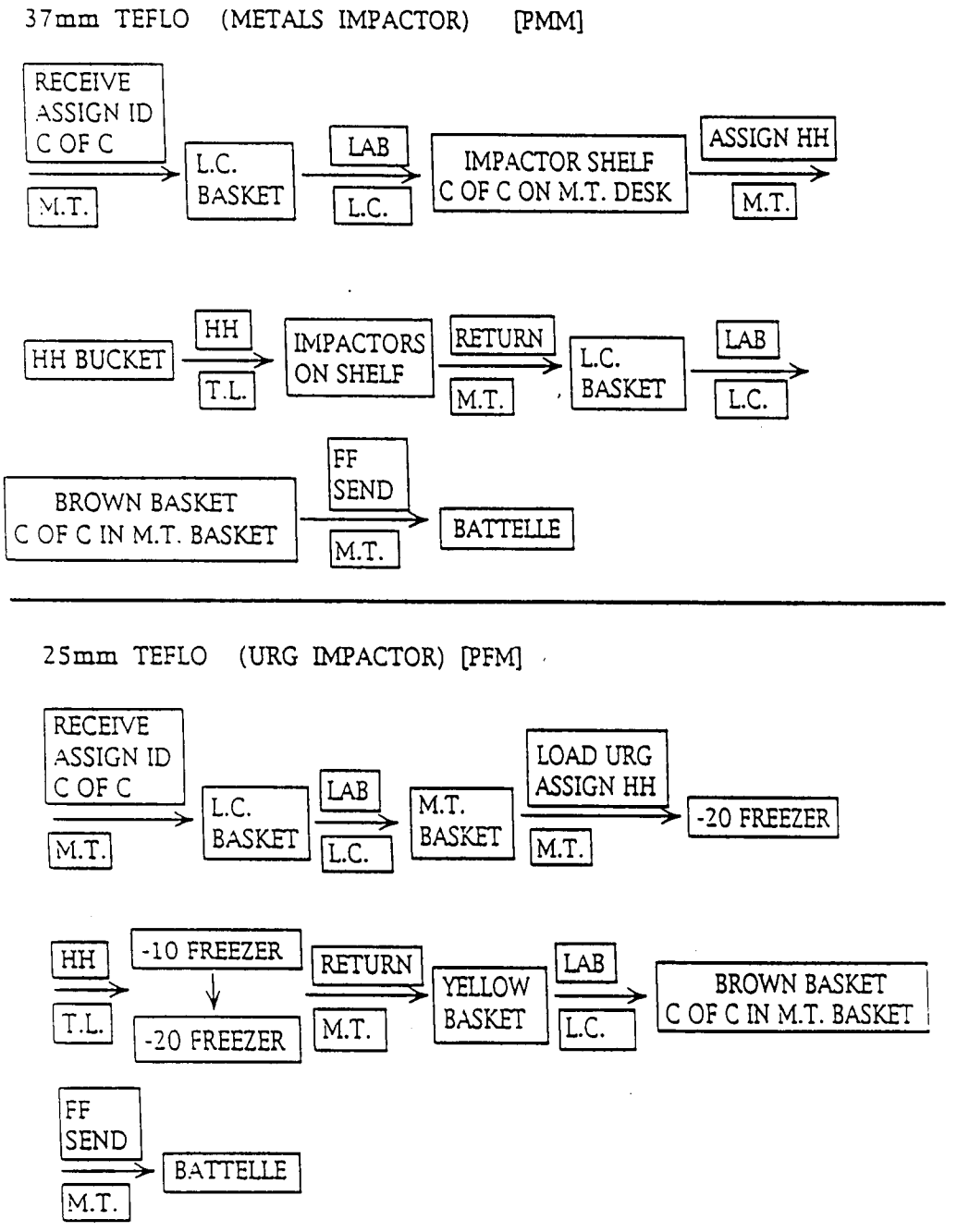


Figure 9. Sample Flow Charts (page 6 of 6)