National Human Exposure Assessment Survey (NHEXAS)

Arizona Study

Quality Systems and Implementation Plan for Human Exposure Assessment

The University of Arizona
Tucson, Arizona 85721

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Standard Operating Procedure **SOP-BCO-G-2.1**

Title: Procedure for the Receipt of Samples or Reference Compounds for Laboratory Analysis at Battelle

Source: The University of Arizona

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

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Procedure for the Receipt of Samples or Reference Compounds for Laboratory Analysis at Battelle

1.0 Purpose and Applicability

This standard operating procedure (SOP) describes Battelle Sample Login and Distribution procedures. Procedures concerning the sample Chain of Custody record are also delineated.

2.0 Definitions

None.

3.0 References

3.1 "Standard Practice for Preparation of Sediment Samples for Chemical Analysis," Standard D 3976, American Society for Testing and Materials, Annual Book of ASTM Standards, Vol. 11.02, 1992.

3.2 "Standard Test Method for Percent Solids in Titanium Dioxide Slurries," Standard D 3926, American Society for Testing and Materials, Annual Book of ASTM Standards, Vol. 6.01, 1991.

4.0 Discussion

None.

5.0 Responsibilities

5.1 The co-Principal Investigator at Battelle will designate an individual to serve as the Sample Custodian.

5.2 Samples (each with their own unique, UA-assigned ID number) will be collected in the field by University of Arizona personnel. The UA Sample Custodian will ship the samples to Battelle, Columbus. The UA Sample Custodian will contact the Battelle Sample Custodian **every** time a shipment of field samples is sent back to Columbus. The purpose of this communication is to provide the Battelle Sample Custodian with information on the number of boxes to be expected in that shipment and the Battelle, Columbus shipment arrival date.

5.3 Samples received at Battelle will be formally logged into the database by the Sample Custodian.

5.4 Any person who amends or alters this procedure is responsible for ensuring that the changes have been properly documented, and that the SOP has been changed, reviewed, and reissued.

6.0 Materials and Equipment

6.1 Materials

6.1.1 Chain of Custody records.

6.1.2 Sample tracking records (computerized).

6.1.3 Refrigerators, freezers.

6.1.4 Secured sample receipt and storage room.

6.1.5 ScanOne Bar code reader.

6.1.6 Access 97 (or later version).

7.0 Procedures

7.1 Receipt of Field Samples

7.1.1 Make arrangements to gain possession of the samples as soon as they arrive at Battelle.

7.1.2 Verify that the ice packs in the biomailer are cold to the touch. If not, make a note on the UA shipment receipt report that the ice packs were not cold upon receipt.

7.1.3 Unpack and inspect the samples in the designated receiving/storage area at the time of receipt. Place a sample ID label from the sample in the upper right corner of the Chain of Custody record(s) and verify that the sample ID numbers match (any discrepancies should be noted on the Chain of Custody form for later correction). Place the sample in the designated freezer or refrigerator for storage. When all samples are in the freezer/ refrigerator, verify that the number of samples shipped matches the number of samples actually received.

7.1.4 Check to make sure that the samples listed on the Chain of Custody record have been properly relinquished. If there are any discrepancies, immediately contact the UA Sample Custodian to resolve the problem.

7.1.5 File the UA shipment report in the appropriately labeled binder along with a copy of the Battelle sample receipt report.

7.2 Log-In and Distribution of Samples

7.2.1 Sign, date, and indicate received time on the Chain of Custody record.

7.2.2 Locate corresponding field sheets for all samples. Samples with missing field sheets will be coded as "Login Incomplete" during the electronic login process (see Sections 7.2.6.7 and 7.2.6.8).

7.2.3 Using red ink, stamp each field sheet as "Copy."

7.2.4 For a given Sample ID number, match each Chain of Custody record with the corresponding field sheet.

7.2.5 Open the project database by double-clicking the icon.

7.2.6 Open the "Sample Receipt" form.

7.2.6.1 Enter the 6-digit household identification number in the "HHID" data field.

7.2.6.2 Enter the 7-digit sample identification number in the "Sample ID" data field.

7.2.6.3 Enter your personal two-digit identification code in the "Tech ID" data field.

7.2.6.4 Enter the date that sample was received at Battelle in the "Battelle Rcvd Date" data field.

7.2.6.5 Enter the date that the sample was collected in the field in the "Collection Date" data field.

7.2.6.6 If the sample is a split sample, enter the original sample identification number that the sample was aliquoted from in the

"Mother Sample ID" data field. Otherwise, leave this field blank.

7.2.6.7 Enter any pertinent comments in the "Comment" data field, e.g., enter "Missing Field Sheet" for any sample that was not sent with its corresponding field sheet.

7.2.6.8 Enter the one-digit code describing the status of the login event in the "Event Status" data field. For example, if the sample's field sheet is missing, enter the code that corresponds to a "Partially Completed" event (see table below for a list of event status codes and their corresponding descriptions).

Event Status Code	Description
1	Completed
2	Not Completed
3	Partially Completed
4	Recollect
5	Refused
7	Destroyed
8	Not Applicable
9	Missing

7.2.6.9 Enter the appropriate QA designation, if applicable, by selecting "Field Blank", "Field Spike" or "Field Duplicate" in the "QA" data field.

7.2.6.10 For floor dust samples:

7.2.6.10.1 Enter the total amount of dust (g) collected in the "Collect (g)" data field.

7.2.6.10.2 Enter the weight of the split aliquot (g) assigned the given sample identification number in the "Aliquot (g)" data field.

7.2.6.10.3 Enter the area vacuumed (m^2) in the "Area Vacuumed (m^2)" data field.

7.2.6.11 For sill wipe samples:

7.2.6.11.1 Enter the area (cm^2) of the first sill wiped in the "Area1 (cm^2)" data field.

7.2.6.11.2 Enter the area (cm^2) of the second sill wiped in the "Area2 (cm^2)" data field.

7.2.6.12 For air samples:

7.2.6.12.1 Enter the flow measurement (L/min, or cm^3/min for active VOC) taken during the initial setup in the "I-Flow" data field.

7.2.6.12.2 Enter the flow measurement (L/min, or cm^3/min for active VOC) taken during sampler takedown in the "F-Flow" data field.

7.2.6.12.3 Enter the time (min) that the pump sampled in the "Time" data field.

7.2.6.12.4 Enter whether the sample was taken indoors or outdoors by clicking either on "Indoor" or "Outdoor" in the "Location" data field.

7.2.6.13 For OVM 3500 samples:

7.2.6.13.1 Enter the sample start date and time (mm/dd/yy 12:00) in the "Start" data field.

7.2.6.13.2 Enter the sample stop date and time (mm/dd/yy 12:00) in the "Stop" data field.

7.2.7 When all samples are entered, open the report labeled "Shipment Receipt." You will be prompted to provide the shipment receipt date. Print a copy of this report and check this list against the UA shipment report to ensure all samples have been entered and accounted for. File this copy with the UA shipment report in the appropriately labeled binder, as described earlier.

7.2.8 Open the appropriate "Analyses Pending Report," i.e., "Pesticides Analyses Pending" for pesticides, "Metals Analyses Pending" for metals,

and "VOCs Analyses Pending" for VOCs. Print and distribute these reports to each analytical group and the project's Principal Investigator.

7.2.9 When custody of a sample is transferred, the Sample Custodian will sign, date, and indicate the time of relinquishment on the Chain of Custody record. The receiving analyst will then sign, date, and indicate the time the sample was received.

7.2.10 The sample custodian will open the "Sample on to Extraction/Digestion" form. Here, the "Sample ID," "Tech ID" (taking custody), "Event Status," "Event Date," and any comments are required. When all of the sample custody transactions have been recorded, close the form. Open the "Update Extract Digest" Query. After this query has run, the database views these samples as in the extraction/digestion process.

7.2.11 **Prior to checking out another set of samples for extraction, the sample custodian must have received the data, in template form, for the previous set of samples checked out.**

7.3 Storage of Samples

7.3.1 Keep all samples, when not in use, in a locked refrigerator/freezer, or at room temperature in a secure area, such as a locked room.

7.3.2 Store any remaining sample (after extraction/digestion and analysis) in a secure area until the study has ended. At that time, dispose of the sample in an appropriate manner.

7.4 Quality Control

Not applicable.

7.5 Calculations

Not applicable.

8.0 Records

As indicated in Section 7.2.