California Department of Pesticide Regulation
Environmental Hazards Assessment Program
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STANDARD OPERATING PROCEDURE

Transporting, Packaging and Shipping Samples from the Field to the Warehouse or Laboratory

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KEY WORDS

Ice chest, sample, ice, temperature

APPROVALS

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Environmental Monitoring Branch organization and personnel, such as management, senior scientist, quality assurance officer, project leader, etc., are defined and discussed in SOP ADMN002.

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1.0 INTRODUCTION

1.1 Purpose

To ensure that samples are adequately packed in the field to avoid breakage and that samples are stored at the appropriate temperature for each media.

1.2 Scope

This document will provide specific instructions for packing and transporting samples after they have been collected. For instructions on how to package sampling materials prior to collection, see Standard Operating Procedure QAQC005.00.

2.0 MATERIALS

2.1 Ice chests
2.2 Wet ice or blue ice for cooling water or vegetation samples
2.3 Dry ice for cooling soil, air, or vegetation samples
2.4 Appropriate packing material for sample containers (ex: styrofoam 6-packs for quart jars and 1 L Amber bottles)
2.5 Hobo® Temp data logger or Min/Max Temperature recorder
2.6 Bubble plastic or other packaging material
2.7 Duct tape or packing tape
2.8 Permanent black marker
2.9 White label tape

3.0 PROCEDURES

3.1 SAMPLE TRANSPORT FROM THE FIELD TO THE WAREHOUSE OR LABORATORY

Before leaving the warehouse (sometime prior to sample collection), an ice chest should be filled with the appropriate ice (wet, dry, blue). This is to ensure that the samples are chilled immediately after collection. If the study is conducted under Good Laboratory Practices, a Hobo® Temp data logger or Min/Max Temperature recorder should be placed in each ice chest. Instructions for operating a Hobo® Temp data logger are found in Standard Operating Procedure EQOT001.01.

3.1.1 Place samples in styrofoam holders or other containers in ice chests immediately after sampling in the field or removal from storage refrigerators or freezers at an Environmental Hazards Assessment Program warehouse facility.

3.1.2 Surround the samples with sufficient ice to chill to the appropriate temperature. For **water samples** and **vegetation to be analyzed for internal and/or dislodgeable residue**, use wet ice or blue ice to chill the samples to 4°C. For **air**, **soil**, and **vegetation to be analyzed for total residue** use dry ice to chill the samples to -10°C to -70°C. It is preferable to maintain total pesticide residue samples at -70°C. If dry ice is not available, use any form of refrigeration in the following order of desirability: 1) freezer, 2) refrigerator, 3) blue ice, 4) wet ice (Sava, 1994). If the study is conducted under Good Laboratory Practices, the time and date the samples were placed in the ice chest should be recorded in the field notebook.

3.1.3 Check the samples often, making sure there is enough ice to maintain the required temperature. Add more ice when necessary, and drain off water as wet ice melts.

3.2 ADDITIONAL SHIPPING PROCEDURES

3.2.1 Pack samples securely by either adding packing material or wrapping containers in bubble plastic in order to prevent breakage.

3.2.2 Chain of custody (COC) records must accompany samples at all times and should be filled out according to Standard Operating Procedure ADMN006. Secure COCs in plastic bags and tape to the inside of the ice chest lid.

3.2.3 Using duct or packing tape, wrap the ice chest twice to seal the opening. This will alert the sample custodians to whether or not the ice chest has been tampered with.

3.2.4 If the ice chest is not already labeled, use the permanent marker and label tape to address the package to the appropriate destination. Note: Certain shipping companies may require a specific label to be used. Also, check with the airline or shipping company for any restrictions, including type of ice to be used.

3.3 RECEIVING

Samples that have been shipped to the West Sacramento warehouse, will be received by a sample custodian. This custodian will follow Standard Operating Procedure QAQC003.01 for check-in and check-out methods. Additionally, the custodian will notify the EHAP QA officer and project leader of any samples broken during transport and record the condition on the corresponding COC.

4.0 REFERENCES

Sava, R. 1994. Guide to Sampling Air, Water, Soil, and Vegetation for Chemical Analysis. Department of Pesticide Regulation - EHAP report EH 94-04. Sacramento, California.