COVER SHEET
STANDARD OPERATING PROCEDURE

OPERATION TITLE: **DUST WIPE COLLECTION PROTOCOL**

ORIGINATOR:
Becky Blais
Quality Assurance Coordinator
Division of Remediation
Bureau of Remediation and Waste Management

APPROVALS:

Division of Remediation Director:

Carla J. Hopkins		Dec 20, 2021
Print name	*Signature*	*Date*

Bureau of Remediation and Waste Management Director:

Susanne Miller		Dec 22, 2021
Print name	*Signature*	*Date*

QMSC Chair:

Kevin Martin		Dec 23, 2021
Print name	*Signature*	*Date*

Department Commissioner:

Melanie Loyzim		Dec 23, 2021
Print name	*Signature*	*Date*

DISTRIBUTION;

( ) Division of Remediation……....By:_____Date:_____

1.0 APPLICABILITY

This Standard Operating Procedure (SOP) applies to all programs in the Maine Department of Environmental Protection's (MEDEP) Division of Remediation (DR). It is also applicable to all parties that may submit data that will be used by the MEDEP/DR.

This SOP is not a rule and is not intended to have the force of law, nor does it create or affect any legal rights of any individual, all of which are determined by applicable statutes and law. This SOP does not supersede statutes or rules.

2.0 PURPOSE

The purpose of this document is to describe the MEDEP/DR procedures and protocols for collecting settled dust samples.

3.0 RESPONSIBILITIES

All MEDEP/DR Staff must follow this procedure when performing this task. All Managers and Supervisors are responsible for ensuring that their staff are familiar with and adhere to this procedure. MEDEP/DR staff reviewing data by outside parties are responsible for assuring that the procedure (or an equivalent) was utilized appropriately.

4.0 GUIDELINES AND PROCEDURES

4.1 INTRODUCTION

Wipe Sampling for Settled Metal-Contaminated Dust. Wipe samples for settled metal contaminated dust can be collected from floors (both carpeted and uncarpeted), interior and sash/sill contact areas, and other reasonably smooth surfaces. Wherever possible, hard surfaces should be sampled. Wipe media should be sufficiently durable so that it is not easily torn but can be easily digested in the laboratory. Recovery rates of between 80-120% of the true value should be obtained for all media used for wipe sampling. Blank media should contain no more than 2 ug/wipe of any target metal (the detection limit using Flame Atomic Absorption).

4.2 SAMPLING EQUIPMENT

4.2.1 DISPOSABLE WIPE: Any wipe material that meets the following criteria may be used:

- Contains low background metal levels,
- Is a single thickness,
- Is durable and does not tear easily (do not use Whatman™ filters),
- Does not contain aloe or lanolin,
- Can be digested in the laboratory,
- Has been shown to yield 80-120% recovery rates from samples spiked with metal dust (not metals in solution),

- Must remain moist during the wipe sampling process (wipes containing alcohol may be used as long as they do not dry out).

4.2.2 NON-POWDERED DISPOSABLE NITRILE GLOVES Disposable gloves are required to prevent cross-sample contamination from hands.

4.2.3 NON-STERILIZED POLYETHYLENE CENTRIFUGE TUBES (50 ml size) or equivalent hard-shell container that can be rinsed quantitatively in the laboratory.

4.2.4 DUST SAMPLE COLLECTION FORMS.

4.2.5 CAMERA to document exact locations (Optional).

4.2.6 TEMPLATE Masking tape or hard, smooth, reusable templates may be used to define the area to be wiped. Reusable templates must be decontaminated between samples. Disposable templates are also permitted so long as they are not used for more than a single surface. Templates must be larger than 0.1ft^2, but smaller than 2ft^2. Templates for floors are typically 1ft^2. Templates are usually not used for windows due to the variability in size and shape (use masking tape instead).

Note: Masking tape may damage the painted surface. Drafting tape or painter's tape may be less damaging to the paint. Any tape will be harder to remove, the longer it has been in place.

4.2.7 CONTAINER LABELS OR PERMANENT MARKER

4.2.8 TRASH BAG or other receptacle (do not use pockets or trash containers at the residence).

4.2.9 RACK, bag, or box to carry tubes (optional).

4.2.10 MEASURING TAPE

4.2.11 DISPOSABLE SHOE COVERINGS (optional).

4.3 SINGLE SURFACE WIPE SAMPLING PROCEDURE

4.3.1 OUTLINE WIPE AREA:

4.3.1.1 FLOORS:

Identify the area to be wiped. Do not walk on or touch the surface to be sampled (the wipe area). Lay down a template or apply masking tape to the perimeter of the wipe area to form a square or rectangle of about one square foot. No measurement is required at this time. The tape should be positioned in a straight line and corners should be nominally perpendicular. When putting down any template, do not touch the interior wipe area.

4.3.1.2 WINDOWSILLS AND OTHER RECTANGULAR AREAS

Identify the area to be wiped. Do not touch the wipe area. Apply two strips of masking tape across the sill to define a wipe area at least 0.1 square foot (ft^2) in size (approx. 4 inches (“) x 4.”

4.3.2 PRELIMINARY INSPECTION OF DISPOSABLE WIPES

Inspect the wipes to determine if they are moist. If they have dried out, do not use them. When using a container that dispenses wipes through a “pop-up” lid, the first wipe in the dispenser at the beginning of the day should be thrown away. The first wipe may be contaminated by the lid and is likely to have dried to some extent. Rotate the container in all directions prior to each use to ensure liquid inside the container contacts the wipes.

4.3.3 GLOVES

Wear disposable gloves and don new gloves between sample locations. t is not necessary to wipe the gloved hand before sampling.

4.3.4 COLLECTION OF SAMPLES

Place the wipe at one corner of the surface to be wiped with wipe fully opened and flat on the surface. For square sample areas, complete a first wipe pass side-to-side as follows. Lay the entire hand flat on the sampling wipe, with the fingers together. If necessary, grasp the edge of the wipe between the thumb and side of the hand. Press down firmly, but not excessively, with both the palm and fingers. Do not use only the fingertips or the heel of the hand to hold down the wipe because there will not be complete contact with the surface, and some dust may be missed. Do not touch the sample area surface with the thumb. Proceed to wipe side-to-side with as many “S”-like motions as are necessary to completely cover the entire wipe area. Exerting excessive pressure on the wipe will cause it to curl. Exerting too little pressure will result in poor collection of dust. Attempt to remove all visible dust from the wipe area.

Fold the wipe in half with the contaminated side facing inward. (The wipe can be straightened out by laying it on the wipe area, contaminated side up, and folding it over.) Once folded, place in the top corner of the wipe area and press down firmly with the palm and fingers. Complete a second wipe pass moving from top-to-bottom and wiping the area with “S”-like motions. Attempt to remove all visible dust. Do not touch the contaminated side of the wipe with the hand or fingers. Do not shake the wipe in an attempt to straighten it out, since dust may be lost during shaking.

For rectangular sample areas, two side-to-side passes must be made over half of the surface and the second pass with the wipe folded so that the contaminated side faces inward. For a windowsill, do not attempt to wipe the irregular edges presented by the contour of the window channel. Avoid touching other portions of the window with the wipe. If there are paint chips or gross debris in the window well, attempt to include as much of it as possible on the wipe. If all of the material cannot be picked up with one wipe, field personnel may use a second wipe at their discretion and insert it in the same container. Consult with the analytical laboratory ahead

of time to determine if they can perform analysis of two wipes as a single sample. When performing single-surface sampling, do not use more than two wipes for each container. If heavily dust-laden, a smaller area should be wiped. It is not necessary to wipe the entire windowsill, but do not wipe less than 0.10 ft^2 (approx. 4" x 4").

4.3.5 PACKAGING THE WIPE

After wiping, fold the wipe with the contaminated side facing inward again, and insert aseptically (without touching anything else) into the centrifuge tube or other hard-shelled container. If gross debris is present, such as paint chips in a window well, make every attempt to include as much of the debris as possible in the wipe.

4.3.6 SEAL THE TUBE AND LABEL WITH THE APPROPRIATE IDENTIFIER

Record the laboratory submittal sample number on the field sampling form.

4.3.7 AREA MEASUREMENT

After sampling, measure the surface area wiped to the nearest eighth of an inch (1/8") using a tape measure or a ruler. The size of the area wiped must be at least 0.10 ft^2 in order to obtain an adequate limit of quantitation. No more than 2 ft^2 should be wiped with the same wipe or else the wipe may fall apart. Record specific measurements for each area wiped on the field sampling form.

4.3.8 FORM COMPLETION

Collect and maintain any field notes regarding type of wipe used, lot number, collection protocol, etc.

4.3.9 TRASH DISPOSAL

After sampling, remove the masking tape and throw it away in a trash bag. Remove the glove; put all contaminated gloves and sampling debris used for the sampling into a trash bag. Remove the trash bag when leaving the site. Do not throw away gloves or wipes inside a dwelling unit where they could be accessible to young children.

4.3.10 BLANK PREPARATION

After sampling the final location of the day, but before decontamination, field blank samples should be obtained. Analysis of the field blank samples determines if the sample media is contaminated. Each field blank should be labeled with a unique identifier similar to the others but that identifies the sample as a field blank.

Blank wipes are collected by removing a wipe from the container with a new glove, shaking the wipe open, refolding as it occurs during the actual sampling procedure, and then inserting it into the centrifuge tube without touching any surface or other object. One blank wipe is collected for each dwelling unit sampled or, if more than one dwelling unit is sampled per day, one blank for

every 50 field samples, whichever is less. Also, collect one blank for every lot used. Record the lot number.

5.0 SAMPLER DECONTAMINATION

After sampling, wash hands thoroughly with plenty of soap and water. A bathroom in the building or dwelling unit may be used for this purpose, with the owner's or resident's permission. If there is no running water at the site, use wet wipes to clean your hands. During sampling, sampler must not eat, drink, smoke, chew gum or otherwise initiate hand to mouth contact.

6.0 DOCUMENTATION/ CHAIN OF CUSTODY

Submittal Form Preparation. Fill out the appropriate field sampling forms completely. The sample numbers on the sample container must be the same as those on the field sampling form and must also be used on the laboratory submittal form. Confirm that all samples recorded are in fact present on the laboratory submittal form.

All site visits must be documented as described in the MEDEP/DR SOP# RWM-DR-013 - Documentation of Field Activities and Development of a Trip Report. Use of specialized sampling forms is allowed, following the procedure outlined in DR-013. Sample custody must be followed as outlined in MEDEP/DR SOP# RWM-DR-012 – Chain of Custody Protocol.

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