

**A GUIDE FOR ASSESSING ANTHRAX CONTAMINATION  
AT DEPARTMENT OF THE ARMY  
MAIL FACILITIES  
02 NOVEMBER 2001**

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The information contained in this document is interim guidance based on current understanding of the potential threats and existing recommendations from CDC, USAMRIID, and USACHPPM. This document will be placed on the USACHPPM Homepage and updated as the science and understanding of addressing this threat evolves.

1. REFERENCES. References are contained throughout the document in the respective sections.

2. INTRODUCTION

a. Since October 3, 2001, the CDC and state and local public health authorities have been investigating cases of bioterrorism-related anthrax. Investigations have focused on select US Postal facilities and the subsequent down stream recipients of mail. To date, environmental sampling revealed anthrax contamination and implicated one or more mailed letters or packages as the likely source of contamination at mail handling facilities in Florida, New Jersey, New York City, and the District of Columbia.

b. Of immediate concern is the potential contamination of US Army mail handling facilities downstream from US Postal Service Processing and Distribution Centers that have tested positive for anthrax. Of particular concern are mail-handling facilities downstream from the Brentwood Processing and Distribution Center because of the large number of Federal facilities receiving mail from this location. This Center, located in the District of Columbia, has tested positive for anthrax contamination. To date, contamination at mail handling facilities downstream of the Brentwood facility has been confirmed at a number of Federal and non-Federal locations. Therefore, there is a need to evaluate Army mail handling facilities receiving mail from the Brentwood facility for possible anthrax contamination.

c. There may also be a need for Army facilities not currently impacted by bioterrorism-related anthrax contamination to be prepared for evaluating their mail handling facility if such a threat should arise. This guidance may also be applied to address anthrax contamination in non-mail handling facilities on your installation. If this protocol is anticipated for use in other situations USACHPPM should be contacted for further guidance.

d. The information provided in this document will assist you in the systematic evaluation of a mail handling facility to determine anthrax contamination and any follow-on remediation. The guidance provided does not apply to situations entailing response to a suspected biological incident where the type and dissemination of the airborne agent is not known (i.e. situation where first responders would be called)

Use of Trademarked names does not constitute endorsement by the Department of Defense, but is intended only to assist in the identification of a specific product.

e. The major components of any Bio-Contamination Response Plan are the Site Safety and Health Plan (SSHP) and the Sampling Plan (SP). The basic procedures outlined also include packaging, labeling and transportation of samples; a risk communications strategy; and decontamination. There is currently no guidance available or presented in this document to determine clearance criteria following decontamination or re-occupancy standards. These are currently being addressed and will be presented in a future CHPPM information sheet, when available.

f. Only professionals with experience and required training in worksite or environmental monitoring should conduct the procedures outlined in this document. These professionals include industrial hygienists, environmental engineers/scientists, environmental science officers/sanitary engineers (72D/E), and preventive medicine technicians (91S). Early involvement of installation key players such as medical facilities/health clinic, public works, laboratory analytical support, safety office, public affairs, first responders (fire department), Provost Marshal/Military Police is key to the success of your identification, evaluation, and, if required, remediation of the threat. Public affairs personnel should be prepared to receive and answer questions and relay recommendations.

### 3. ENVIRONMENTAL SAMPLING AND CHARACTERIZATION.

a. Introduction. Environmental sampling should be conducted to provide the best opportunity to locate and identify *Bacillus anthracis* spores. The methods employed should be surface sampling strategies.

b. Sampling Considerations. Primary consideration should be given to the collection of surface samples in locations that are near to the suspected release source. However, to prevent cross contamination of samples, the sampling should start at the least suspected contaminated areas and work towards the most suspected contaminated areas. Additionally, spores might adhere to objects that may provide another transportation mechanism for the spores. In addition, it is recognized that aerosolized spores could enter the heating, ventilation, and air conditioning (HVAC) system so air vents should be sampled.

Note: Air sampling is currently not indicated by guidance from the CDC. If air sampling is required, it should be conducted by trained and equipped personnel. Contact USACHPPM for further assistance.

#### c. Surface samples

1.) Surface samples may be collected by wiping the specific area of a suspect contaminated non-porous surface with an absorptive medium that can be subsequently extracted in the laboratory environment. Numerous alternatives exist including the use of swabs, gauze, or specially designed sponges. Based on our experience and microbiology contacts at the Department of Defense laboratories, moistened rayon or Dacron<sup>®</sup> swabs have

been identified as the best and most expedient way to conduct the sampling and the laboratory analysis.

2.) Sterility of the medium is critical to ensure background contamination levels are non-existent. Wetting of the medium surface is advised to increase the adhesion of spores. Use sterile water, sterile saline solution, or sterile phosphate buffer solutions as your wetting agent. Always check with the appropriate receiving analytical laboratory on what they recommend for the best possible collection media and analysis of samples.

#### d. Sampling Procedures

1.) If possible, before sampling turn off the room HVAC, close all windows and doors, and turn off any fans and all equipment (e.g. computers, mail labeling equipment, printers, etc). Leave all systems off until sample results are known.

2.) Determine the entire mail process flow and identify the most probable sources of contamination. If possible, discuss with the mail clerk(s) where bags or crates of mail are first brought into the room(s) and how they handle the mail through out the entire process. Identify any potential source of disturbance (air movement, physical movement, walkways and hallways) of the mail (letter, boxes, crates) handling surfaces. For example, such disturbances include jostling letters, and moving bulk mail crates or mail bags. Identify the pathways individuals carrying the mail may walk and sample these areas as well. Mail processing equipment such as any mechanical strapping, handling, stamping processes have already been identified as excellent sampling locations. Sampling of distribution boxes or office mail slots is also recommended. Spores can also be disseminated via direct attachment to clothing or other inanimate objects, such as computer keyboards, telephones, and electronic devices, such as fax machines. Sampling of HVAC inside the mailroom has been advised.

3.) It is strongly recommended to use at a minimum a 3-person sampling team to conduct this type of surface sampling.

#### 4.) 1<sup>st</sup> person team member duties: RECORDER

- a.) Draws a sketch or map of the room for future reference and documentation of sampling locations. Using "Sample Information And Chain Of Custody Form in Appendix A"
- b.) Holds a pre-numbered list of sample labels and places them on the Whirl-pak® or Ziploc® bag or similar sample container and records all data on the environmental sampling information and chain of custody form. Ensure the label will not be damaged by dilute bleach solution during decon prior to leaving the sampling area.
- c.) This team member is responsible for recording the location of each sample and placing it on the sketch.

5.) 2<sup>nd</sup> person team member duties: SUPPLY HOLDER and SWAB SAMPLING ASSISTANT

- a.) This team member holds the tube rack of sterile conical vials or tubes and the sterile, individually wrapped swabs. This person is responsible for holding the collection tubes and handing off the tubes to the person who is sampling then placing them into the Whirl-pak® or Ziploc® bag or similar sample container.
- b.) This team member is also responsible for handing off the individually wrapped swabs to the third team member who is responsible for collecting the sample.
- c.) This team member also holds the regulated medical waste bag either taped or hooked onto his waist or belt. This will serve as a waste receptacle for the swab, which will have to be broken before capping the conical vial and for the collection of latex exam gloves after each sample is collected to prevent cross contamination.

6.) 3<sup>rd</sup> person duties: SURFACE SWAB SAMPLER

- a.) This team member is responsible for collecting the swab samples and for communicating sample collection information. The recorder will document specific comments about the sampling location and other information as relayed.
- b.) The Surface Swab Sampler must change outer gloves after each sample is collected. If gloves are not changed there will be a chance of cross-contamination of future samples. Peel gloves off from the top so that they are inside-out when removed. Wash hands thoroughly with soap and water after sampling. Clean between fingers, around nailbed, and include the wrist area near the hand.

7.) Pre-sampling preparation (before entering the potentially contaminated mail room or potentially contaminated area): Using a sterile pipette, place approximately ½ ml of sterile water, sterile saline, or sterile phosphate-buffered solution into a sterile conical vial. Check with the analytical laboratory on which solution is preferred for analysis. Sterile phosphate buffer saline with 0.3% Tween (surfactant or detergent) solution has been identified as an excellent wetting agent solution, which helps with the recovery of agents from the swabs. Without the reagent, less of the *b. anthracis* can be eluted from the swabs and this reduces the sensitivity of the collection.

8.) Start sampling in close proximity to the most probable sources of dispersion of an aerosol. However, move from the most suspected clean area to the most suspected contaminated area.

9.) Prior to entering the suspected contaminated area, don clean outer gloves.

10.) Remove sterile rayon or Dacron® type material swab or similar culture capturing device (as a last resort cotton swabs can be used) from package. . However, the cotton inhibits polymerase chain reaction (PCR) analysis. Based upon USAMRIID’s advice do not use culturettes..

11.) When ready to sample, moisten rayon or Dacron® swab or similar capturing device by dipping into the conical vial with the wetting agent until fairly moist but not sopping wet. Note: The second team member can open the conical vial and the swab package for you.

12.) Swab surface to be sampled. Do not allow the swab to dry completely. Swab an approximate square area of 10 cm by 10 cm (100 square centimeters) or 4-5” by 4-5” or roughly the size of your palm. Start at the top left of your square and move the swab to the right horizontally then back left horizontally without picking up the swab from the surface. Continue this pattern until the square is completed horizontally.

13.) Rotate the swab to the clean side then repeat the surface swab process vertically using the same motion of pattern.

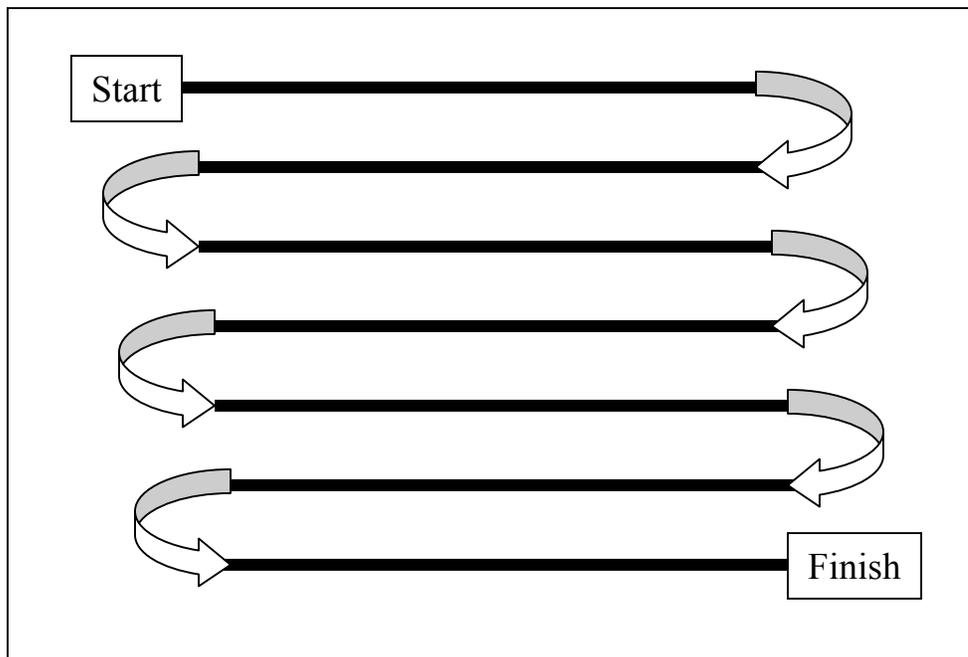


Figure 1: Illustration of horizontal swab technique.

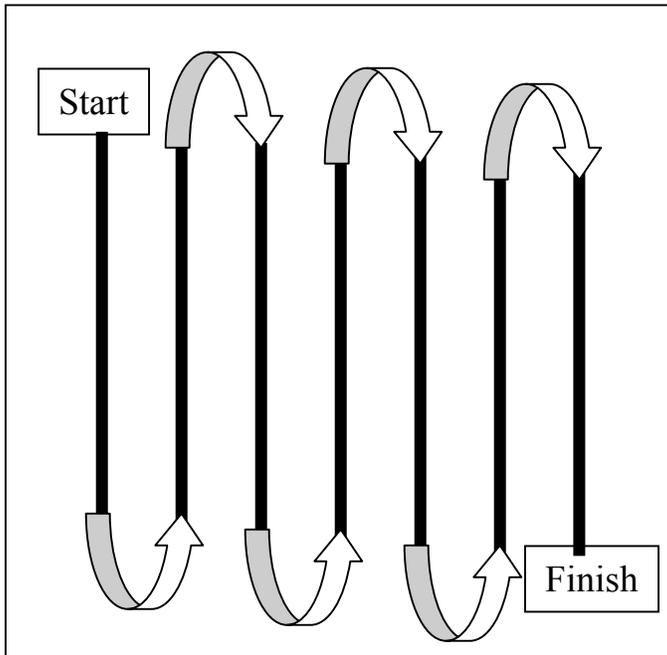


Figure 2: Illustration of vertical swab technique.

14.) Place sampled swab into sterile conical vial and snap the excess handle off and place into the regulated medical waste bag carried by team member #2 and cap the conical vial.

15.) Label conical vial, wrap in non-particulate absorbent material (e.g. thick paper towel, cellulose wrapping) then place in Whirl-pak® , Ziploc® bag or similar sample container then label Whirl-pak® , Ziploc® bag or similar sample container. Record all pertinent information pertaining to the object swabbed (i.e., chair at desk #1, mechanical strapping machine #1, desk surface at main mail distribution site). Mark your sketch to pinpoint where your samples were taken for future use.

16.) Wipe the outside Whirl-pak®, Ziploc® bag or similar sample container with a 0.5% sodium hypochlorite solution just prior to leaving the contaminated area. For example, pre mix one cup of household bleach with 9 cups of water and dip your paper towel into this solution and wipe the outside of the Whirl-pak®, Ziploc® bag or similar sample container

17.) Place cleaned Whirl-pak®, Ziploc® bag or similar sample container into another larger unused Ziploc® bag or sealable plastic container. Seal the bag or container appropriately. Affix an OSHA biohazard symbol to the bag or container. (See Enclosure 1)

18.) Submit samples to the appropriate laboratory for analysis following Federal transportation regulations. Submit at least one blank per sampling occurrence. Do not label

it as a blank. Include the blank as if it was a regular sample to assure that the blank is submitted blindly

19.) Continue collecting samples until all potential sources have been sampled. Use professional judgment based on knowledge of how the spores can possibly attach to objects and based on the design flow of the mailroom processing procedures. Make sure to follow possible airflow patterns.

#### 4. GENERIC SITE SAFETY AND HEALTH PLAN ASSESSMENT

##### a. Introduction.

1.) Purpose. The purpose of this Site Safety and Health Plan is to identify the potential hazards and protective measures associated with the evaluation of potential contamination of mailroom facilities via the introduction of biological agents.

2.) Summary of Proposed Actions. Surface sampling will facilitate assessment of surface contamination. Wet a sample medium (e.g., swab with a designated extraction solvent (e.g., 0.3% phosphate buffer solution) and wiped across a surface area of 100 cm<sup>2</sup>. Be careful to minimize the amount of disturbance to peripheral dust particles, in case the biological agent is present. Seal samples in an appropriate vial or sample container, then placed in two sealed plastic bags. Properly label and record, sample data. Transport the samples following Federal transportation regulations to a select analytical laboratory for culturing and analysis.

b. Personnel and Responsibilities. Identify each person involved in the collection, packaging, and/or handling of these samples individually in this section. Briefly explain each person's responsibilities. Further, identify the Site Safety Manager and/or the facility Safety Manager, who must be aware of the operations undertaken.

##### c. Personnel Training.

1.) All study personnel must have successfully completed training to ensure they have the knowledge and skills necessary to safely complete the sampling or decontamination without harming themselves or others. The training should include, as a minimum, the general items summarized in Table 1 and discussed in further detail below. An accredited hazardous waste operations and emergency response (HAZWOPER) course, along with requisite annual refresher training would be considered suitable training for these responsibilities. In addition, the person acting as the Project Safety Manager should have completed the additional training requirements listed in Table 1. A basic HAZWOPER supervisor's course would be considered suitable training for this responsibility. All personnel should be able to produce certification of formal training or its equivalent upon request. The installation medical authority in conjunction with the activity's Safety Office should approve the acceptability of all training. Any site visitors must also have completed suitable training to be on the study site.

TABLE 1. RECOMMENDED TRAINING BY JOB CATEGORY.

TRAINING TOPIC	EMPHASIS OF TRAINING	General Site Worker	Project Safety Manager
Biology, Chemistry, and Physics of Hazardous Materials	Biological, chemical and physical properties; chemical reactions; chemical compatibilities.	✓	✓
Toxicology	Dosage, exposure routes, toxicity, IDLH values, PELs, recommended exposure limits (RELs), TLVs.	✓	✓
Industrial Hygiene	Monitoring workers' need for and selection of PPE.	O	✓
	Calculation of doses and exposure levels; hazard evaluation; selection of worker health and safety protective measures.	O	✓
Monitoring Equipment	Selection, use, capabilities, limitations, and maintenance.	✓	✓
Hazard Evaluation/Recognition	Techniques of sampling and assessment.	✓	✓
	Evaluation of field and lab results.	O	✓
	Biological/Chemical/Physical.	✓	✓
	Risk Assessment.		O
Site Safety Plan	Safe practices, safety briefings and meetings, Standard Operating Procedures, site safety map.	✓	✓
Standard Operating Procedures	Hands-on practice.	✓	✓
	Development and compliance.	O	✓
Engineering Controls	The use of barriers, isolation, and distance to minimize hazards.	✓	✓
Personal Protective Clothing and Equipment (PPE)	Assignment, sizing, fit-testing, maintenance, use, limitations, and hands-on training.	✓	✓
	Selection of PPE	✓	✓
Medical Program	Medical monitoring, first aid, stress recognition.	✓	✓
	CPR and emergencies drills.	O	✓
	Design and planning.		O
	Implementation.	✓	✓
Decontamination	Hands-on training using simulated field conditions.	✓	✓
	Design and maintenance.	✓	✓
Legal and Regulatory Aspects	Applicable safety and health regulations (OSHA, EPA).	O	✓
Emergencies/Accidents	Emergency help, self-rescue, drills, alarms, reporting.	✓	✓
	Emergency response, investigation and documentation.	O	✓
Hazard Communication	Per 29 CFR §1910.200 and §1926.59 (as applicable).	✓	✓
Employee Rights		✓	✓

✓ = Recommended training      O = Optional

Note: Table adapted from Exhibit 3-3, USEPA Environmental Response Team, Standard Operating Safety Guides, Publication 9285.1-03, June 1992.

2.) Individuals issued respirators must be enrolled in a respiratory protection program that complies with the provisions of Army Regulation (AR) 11-34 and OSHA 29 CFR 1910.134. This includes medical clearance to wear the respirator and fit-testing to ensure that the respirator fits properly.

3.) If medical assistance is not readily available, then at a minimum of one of the three sampling team members will have received first aid and cardiopulmonary resuscitation (CPR) training. Current certification from an accredited organization/program will be available. All personnel should be able to produce certification of training upon request.

4.) Safety meetings will be conducted prior to each day's activities. These meetings are mandatory for all sampling personnel. Topics will include, but are not limited to, sampling activities and procedures, associated health and safety issues, and required personnel protective equipment (PPE).

5.) Personnel involved in sampling will receive HAZCOM training on biological hazards including anthrax.

d. Medical Surveillance. All personnel involved in field activities must participate in the medical surveillance program, to include clearance for the use of respiratory protection. Personnel involved in this type of sampling and assessment should consult with/notify the appropriate physician for prescription of pre- and post-exposure prophylaxis.

e. Hazard Assessment.

1.) Chemical Hazards. The most prevalent chemical hazard encountered will be exposure to decontamination solutions. These potentially caustic solutions (e.g., 0.5% sodium hypochlorite) may cause significant irritation or chemical burns to exposed skin. Further, personnel may be exposed to sodium hypochlorite used to decontaminate the plastic bag containing sample vials prior to exiting the contaminated areas. This may cause irritation of the skin.

2.) Physical Hazards. The primary considerations regarding possible physical hazards include temperature-related injuries (heat and cold) and slip, trip, and fall hazards. The donning of PPE will restrict visual acuity, and increase the potential for tripping over items or snagging clothing on furniture/equipment. Appropriate work/rest regiment must be employed to prevent heat-related illnesses and accidents. Cold weather sampling may occur in shipping areas, warehouses and loading docks. During such events, appropriate layered clothing should be worn under PPE. Care must be taken to avoid the effects of cold on hands and feet, in particular. The provision of supplied air should be considered carefully, as well, to ensure that the source of air is in compliance with OSHA respiratory protection standards for Grade D breathing air.

3.) Biological Hazards. The primary biological hazard of current concern is *Bacillus anthracis*.

f. Personal Protective Equipment (PPE).

1.) The recommended PPE for worker protection from *B. anthracis* is dependent upon the specific threat posed by each scenario. These risks are defined below:

- a.) High Risk Activities/Locations:
- Suspicious package received<sup>A</sup>
  - First responders to suspected act of biological terrorism of unknown parameters<sup>B</sup>
  - High threat based on intelligence (location, specific individuals)
  - Environmental sampling yields anthrax spores or culture positive
  - Personnel with nasal swabs positive for anthrax
  - Mail handler working with or in vicinity of high-speed sorter<sup>C</sup>
  - Maintenance/housekeeping personnel in facility with high-speed sorter
- 2.) Moderate risk Activities/locations
- Mail rooms where high-speed sorter is utilized
  - Laboratory workers in facility with Biosafety Level 2 cabinet/practices in place<sup>E</sup>
  - Individuals conducting routine sampling to assess risk without credible threat
  - “Down flow” post office that received mail from the Brentwood facility<sup>D</sup>
- 3.) Low risk
- Mail handlers hand-sorting mail in facility without high- risk features
- 4.) Negligible risk
- All workers not otherwise classified

- A. CDC Health Advisory, CDCHAN-00047-01-10-27-ADV-N, 27 Oct 01, Updated Recommendations for Handling Suspicious Packages or Envelopes.
- B. CDC Health Advisory, 25 Oct 01, Interim Recommendations for Firefighters and Other First Responders for the Selection and Use of Protective Clothing and Respirators Against Biological Agents.
- C. CDC Health Advisory, CDCHAN-00045-01-10-24-ADV-N, 24 Oct 01, Official CDC Health Advisory: CDC Interim Recommendations for Protecting Mail Handlers from Cutaneous and Inhalation Anthrax Associated with Intentional Distribution of *Bacillus anthracis* through the Mail.
- D. CDC Health Update, CDCHAN-00048-01-10-27-UPD-N, 27 Oct 01, Update: CDC Statement Regarding Postal and Other Mailroom Facilities in the Metropolitan Washington, DC Area.
- E. CDC/NIH Biosafety in Microbial and Biomedical Laboratories, 4<sup>th</sup> edition.

g. Among the threat conditions defined above, a “high” threat situation is an uncontrolled situation requiring the use of Level B PPE (unless specifically assigned). Moderate threat situations require the use of Level C PPE. The current guidance for appropriate PPE associated with the collection of biological samples in mailrooms and associated areas is delineated in the following text. These recommendations are based on guidance provided by the Centers for

Disease Control and Prevention (CDC) and the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), at the time of document publication. The points of contact listed in this document for the USACHPPM may be contacted about inquiries regarding updated guidance.

- Personnel entering a site posing a high-risk for sampling activities should be NIOSH-approved SCBA and the protective clothing listed below. below when there is no biological aerosol present or a splash hazard present. (Level B)
- Personnel entering a site posing a moderate risk for sampling activities should use NIOSH-approved, tight-fitting powered air purifying respirator (PAPR) with a high-efficiency particulate air (HEPA) filter(s) when it can be determined that an aerosol-generating device was not used to create high airborne concentration and that dissemination was by a letter or package that can be easily bagged. These type of respirators reduce the user's exposure by a factor of 50 if the user has been properly fit tested (Level C)
- Sampling personnel should don two pair of protective gloves – an inner Nitrile pair, covered by two pairs of latex gloves. The outer pair of latex gloves shall be replaced after the collection of each sample. (Refer to sampling section for further details.)
- Samplers should wear an inner set of poly-coated Tyvek and an outer set of full-body welded seamed (i.e., with hood and booties) Saranex.
- A pair of protective, disposable boots (e.g., butyl or natural rubber booties) will be worn over the booties attached to the protective suit.
- All seams and zippers should be taped with duct tape, to include the joining of gloves and boots to the protective suit.

h. Site Control Measures. The subject of this guidance involves mailrooms in administrative settings. Therefore, the establishment of segregated areas to don and doff PPE will be contingent upon the site-specific location and based upon the professional judgment of the personnel involved using OSHA Guidance Manual for Hazardous Waste Site Activities and NIOSH publication No. 85-115. pages 8-17 & 8-18.

i. Decontamination Procedures. Decontamination involves the controlled removal of potential contamination from equipment, personnel and PPE. Normal procedures for such efforts, involving relative isolation and containment of wash waters and rinsate, may be hindered by the location of the mailrooms being evaluated. Therefore, the following, alternative guidance is offered:

1.) All sampling equipment and sample bags will be decontaminated by wiping with an 0.5% sodium hypochlorite solution prior to leaving the room. Personnel, in PPE, may be sprayed or wiped down with a 0.5% sodium hypochlorite solution upon exiting the room. For example a 3' x 3' absorbent pad may be placed on the floor outside the doorway for each individual. A 1-gallon spray container can be used to lightly spray a mist over each person. The absorbent pad may then be disposed of in a "red-bag" as a regulated medical waste.

2.) Tape shall be carefully removed and disposed of in an extra-large, heavy-duty trash bag.

3.) Protective clothing can be removed by carefully peeling all clothing inside-out while standing in the same extra-large, heavy-duty trash bag held up on either side. (A separate bag would be requisite for each individual.) . As the suit is peeled down, the bag may be lowered so that the sampler can step out. Subsequently, this bag can be sealed and disposed of in a designated regulated medical waste bag (a “red-bag”).

4.) Respiratory protection equipment for all personnel (together) should be removed and carefully placed in a separate plastic bag, which will then be sealed. The HEPA cartridges should be removed from the respirator and placed in a regulated medical waste bag. As a final step, protective inner gloves may be removed after the respirator is doffed. This equipment may be taken to an appropriate area (e.g., away from the general population and where airflow may be controlled) for spray disinfection and washing with sodium hypochlorite solution. Wash respirator with soap and water and rinse appropriately. Dispose of filters in RMW bag. Remove gloves. Wash hands.

j. Emergency Procedures. In case of emergency, during sampling and assessment the installation emergency services should be called at \_\_\_\_\_. These personnel/authorities should be notified that the individual may be contaminated with a biological agent. The locations of telephones (outside of the mailroom) will be identified before sampling begins, and will be the responsibility of an individual not directly involved in the sampling activity. Directions to the nearest hospital facility that accepts patients contaminated with biological agents are shown in Figure \_\_\_\_.

k. Personnel Certification. A pre-entry briefing will be held by the Team Leader prior to all sampling activities. This briefing will consist of the familiarization of project personnel with the sample locations and methodologies, site safety procedures, and emergency response procedures. The following individuals acknowledge that they have been notified of the contents of this SSHP, understand its requirements, and agree to comply with the identified procedures.

Name \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

## 5. PACKAGING, LABELING, AND TRANSPORT.

a. DoD and MEDCOM Medical Facilities should have DOD trained and certified Hazardous Material (Hazard Class 6.2) shippers and UN-approved 6.2 packaging. Use of DoD-certified shippers to package and ship infectious samples and regulated medical waste is required to ensure compliance with National and International transportation regulations for all modes of transport. Only DOD-certified personnel can sign shipping papers for shipping 6.2 materials. .

b. For sample management purposes, minimally label samples as follows: Field identification number, sample location, site name, collectors name, date/time group of sample collection.

c. A generalized triple containment (primary receptacle, water tight secondary packaging, durable UN-approved 6.2 outer packaging) is required when transporting biological agents capable of causing human or animal disease. Advanced arrangements between the shipper, the transporter and the receiver are required prior to transport.

d. Wrap the sample container in absorbent material then place the sample in watertight sealable nonpermeable disposable (one-time use) container (i.e. a zip-lock bag). Decon the watertight container/zip-lock bag using 0.5% bleach solution. (Too much bleach may ruin the integrity of the container and affect the permeability of the watertight container.) Place the entire packaging inside a second plastic sealable container labeled as "biohazard". For maximum protection of the sample, use a third container (e.g. plastic sealable bottle or jar).

e. Place the double/triple packed sample inside a UN-approved 6.2 outer packaging. Place sample collection sheets (an itemized list of enclosed samples) in a separate zip lock bag. Place an itemized list of enclosed samples between the secondary packaging and the outer UN-approved packaging. Maintain a copy of the sample collection sheet and place in a master holding file.

f. Affix a 6.2 Infectious Substance transportation hazard warning label to the outside of the outer UN-approved packaging. Write the Proper Shipping Name with technical name of the agent in parenthesis and UN identification number of the substance next to the label [e.g. Infectious substance, affecting humans (B. anthracis), UN2814.] Affix Package Orientation Markings to two opposite sides of the outer packaging.

g. Write the name and address of the shipper and receiver on the container. Also, write the name and phone number of the person responsible for the shipment on the outer packaging.

h. Complete a shipping paper for the sample shipment. The shipping paper is a Shipper's Declaration for Dangerous Goods for air transport, DD Form 836, Government Shipping Paper for government vehicle transport or commercially available shipping paper identified for the mode of transport. The shipping description on the shipping paper must read as follows:

*Infectious substance, affecting humans (bacillus anthracis), 6.2, UN2814, (type of packaging and total quantity of the samples).*

These documents should contain the shipper's and receiver's addresses and mode of shipment. All Shipper's Declaration for Dangerous Goods must have the statement "Prior arrangements as required by the IATA Dangerous Goods Regulations 1.3.3.1 have been made." in the additional handling section of the Shipper's Declaration. A 24-hour emergency response telephone number is also required. Only DoD trained and certified personnel who have attended and passed the USACHPPM Transport of Biomedical Material Course or 2-week DoD Hazardous Materials Transportation Course are authorized by DoD Reg 4500.9-R to sign hazardous materials shipping papers. Designated certifying officials who sign shipping papers must be appointed in writing by their activity or unit Commander or designated representative.

- i. Complete chain of custody form and include with shipping
- f. Store sample with shipping documentation attached in a cool, dry and secure location until transported. Refrigeration is not necessary.
- g. Use of technical escort, chain of custody, and security personnel is required for select agents identified in 42 CFR Part 72.6. Do not transport the sample until advance arrangements are made between the shipper, the transporter, and the facility receiving the sample to ensure expeditious carriage and delivery of the sample.
- h. Regulations regarding the transport of biological agents are designed to protect the public and persons handling the sample package during transport against exposure to any infectious agent that might be in the package. Protection is achieved through rigorous packaging that will withstand rough handling as described in this document; appropriate labeling of the package with the transportation hazard warning label as described in this document; correct completion of shipping papers for the hazardous material as described in this document; and required training for personnel packaging and certifying the transportation of infectious substances and their waste. All aid in successful transport and response if emergency situations arise during transport.
- i. Biological agents and/or materials known or suspected to contain pathogens are classified as infectious substances by Federal and State governments and managed as hazardous materials for transportation. The adherence to proper transportation regulations is necessary to protect the public and transporter during transport. The Centers for Disease Control and Prevention (CDC), the Department of Transportation (DOT), the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) Dangerous Goods Regulations, the International Maritime Dangerous Goods Code and the United States Postal Service Domestic and International Mail Manual have unified standards for packaging and transporting infectious substances and their waste.
- j. The following websites may provide more detailed information for sample shipment.

--Interstate transportation of biological agents. [www.cdc.gov/od/ohs](http://www.cdc.gov/od/ohs)

--Hazardous materials regulations, 49 CFR Parts 171-178. [www.dot.gov/rules](http://www.dot.gov/rules)

--Domestic mail manual for postage of etiologic agents. [www.access.gpo.gov](http://www.access.gpo.gov)

k. Contact the USACHPPM Hazardous and Medical Waste Program at DSN 584-3651 or commercial (410) 436-3651 to obtain information on certification training for transporting infectious substances. Course registration is available online at <http://chppm-www.apgea.army.mil/trng>. A summary of the course and specific contact information is also available at the website.

l. Recordkeeping and Chain of Custody. Several pieces of information should be recorded in a logbook or notebook for each sample. After the sample identification number, record the date and time the samples were taken. Record any general comments about the room conditions at the time of sample collection which may affect the sample result or the spread of contamination to other areas. Record the location that the sample was collected—a simple sketch of the sample area should be drawn. A listing of personnel located in this area should also be recorded. This same information should be recorded on the datasheet packed with the sample containers. Whenever samples are transferred from one person to another, a custody transfer occurs and should be documented. A DA Form 4137\_form (Chain of custody form) must accompany the shipment and be signed and dated whenever a custody transfer takes place and the final destination (laboratory) is reached. This Chain-of-custody form is primarily for record keeping and sample tracking.

m. Waste Management. Waste generated during the sampling should be considered regulated medical waste. Incineration, irradiation or steam sterilization is required for all contaminated sampling supplies and expendable personal protective equipment (overgarments, gloves, boots, respirator filters, etc.) Procedures for the storage, treatment and disposal of waste materials should be IAW standard medical waste management procedures described in MEDCOM Regulation 40-35. A copy of this document is available online at <http://chppm-www.apgea.army.mil/hmwp>

## 6. RISK COMMUNICATION STRATEGY.

a. Employees working in the building and/or mailroom where a threat from anthrax contamination may exist are certain to become anxious concerning their risk of exposure and the subsequent development of symptoms and the disease. If the central postal facility on an installation is involved, there will be an additional target audience to notify who may have concerns about indirect exposure to contaminated mail. Notifying civilian employees and service members early, and keeping them informed about the progress of and results from the investigation is critical. Their first indication of a potential problem should not be the sight of a sampling team dressed in protective clothing. Prior to an incident occurring a risk communication plan, tailored to the particular type of situation (mail room, installation post office, etc.), should be developed that contains the following elements.

1.) Develop Communication Strategy. Determine who prepares the message, who selects the information to be collected and communicated, who collects the information, and who authorizes the message and contacts the media if appropriate.

2.) Identify Information. The main issues should be identified and addressed and their priority determined so the proper information can be collected. Prepare a profile of the target audience or audiences to assist in preparing the message.

3.) Prepare Message. The message should contain the following information as a minimum. Who is affected and the message source, what is the situation/problem and what is being done, when did it happen and when are actions/results expected, where did it happen and what place is effected, why it is important to follow instructions in the message, and how to respond to and/or deal with the situation. Including appropriate web sites that contain information relevant to the topic will aid the target audience in becoming more knowledgeable about the subject.

4.) Select Communication Mechanism. This will depend on the type of postal facility involved, whether it is a central installation post office or a local facility that serves a single building. Communication may be a building circular, a post newspaper, a local or post radio/television station, etc.

5.) Send Message. Dispatch the message at a time and place that will notify a majority of the target audience. If a print or broadcast deadline is involved, insure it is met.

6.) Monitor and Evaluate. Determine if the message is reaching it's intended target audience and if it is being effective in communicating the desired message. Surveys and questionnaires may be used to accomplish this along with a formal review after the emergency.

b. The U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM) has developed a tri-fold that discusses anthrax and also has a fact sheet (Just the Facts...Anthrax) that answer general questions about anthrax. Modifying the “Just the Facts...Anthrax” fact sheet to “Just the Facts...Anthrax and the Mail” that discusses the specific issues associated with anthrax contamination and postal rooms/installation post offices and the mail, along with the tri-fold, may adequately address the risk communication issue.

## 7. SITE DECONTAMINATION.

a. Purpose: To provide guidance for the cleanup of a mailroom contaminated with Anthrax spores. Mailrooms determined to be free of contamination should be kept clean to ease detection of future contamination events.

b. References:

1.) Anthrax as a Biological Weapon: Medical and Public Health Management, Journal of the American Medical Association, May 12, 1999, Volume 281, Number 18, pages 1735-1745.)

2.) US Army Field Manual 3-5, NBC DECONTAMINATION, undated draft (supersedes Field Manual (FM) 3-5/Fleet Marine Force Manual (FMFM) 11-10, 17 November 1993.)

c. Background. If surfaces within a mailroom or other mail handling area are shown to be contaminated with anthrax spores, decontamination of that area may be warranted to decrease the slight risk of acquiring anthrax by secondary aerosolization.(ref a).

d. Decontamination Methods. There are several methods available to decontaminate a mailroom (reference b). These methods rely on the use of toxic materials which are hazardous in their own right and must be implemented by trained individuals that are equipped with appropriate personal protective equipment (PPE), medically qualified to use this PPE and properly supervised. Unequipped or untrained personnel must not be employed to decontaminate a site. Fumigation of the mailroom with formaldehyde, ethylene oxide, or carbon dioxide/ethylene oxide mixtures is not considered practical or required for small mailrooms due to the complexity of the procedure and the needed precautions to prevent the decontamination process from contaminating the rest of the facility. Decontamination of heating, ventilation and air conditioning systems require special procedures and the assistance of professional personnel. Consult with USACHPPM and USAMRIID for advice in this area.

e. Decontamination Steps. Prior to decontamination, mailroom personnel should be advised that, unfortunately, some of their personal belongings may be damaged or destroyed during this process. An Employee familiar with the area, properly trained and medically qualified to wear PPE should supervise the decontamination process.

1.) Equip all decontamination personnel with the same level of PPE as employed by the Sampling and Assessment Personnel. Implement and maintain the same site controls as employed during the sampling and assessment phase.

2.) Segregate all mail, office supplies, and other replaceable items into mission essential and discretionary categories.

a.) Mission Essential items should be packaged in leakproof/puncture resistance bags or containers and transported to the nearest facility for sterilization by a non-destructive method such as by ethylene oxide/carbon dioxide sterilization, irradiation, or other non-destructive method.

b.) Discretionary items should be packaged as a Regulated Medical Waste (RMW) and transported to the nearest Medical Treatment Facility (MTF) for sterilization and disposal according to the local RMW procedures.

3.) Obtain and place *bacillus subtilis* spore strips (a surrogate for *bacillus anthracis*) in the mailroom at contaminated locations and other various locations to determine the effectiveness of decontamination. *Bacillus subtilis* spore strips can be obtained from various commercial vendors. Follow manufactures instructions on the use of specific spore strips, at a minimum, place spore strips for every 50 ft<sup>2</sup> of surface area.

4.) Thoroughly spray or wipe all walls, floors, ceilings, storage drawer and cabinet interiors, and large office fixtures with a 0.5% household bleach solution (1 part bleach/9 parts water) or other approved disinfectant, let sit for at least 1 hour or until dry. (Porous materials such as carpeting, fabric covered office furniture, and wall panels should be treated the same; however, the bleach/disinfectant solution may damage, discolor or destroy these items. It may be easier to remove and dispose of all porous materials and equipment as regulated medical waste.)

5.) Liberally rinse with clean water to remove all disinfectant residue. Collect and contain all excess bleach/disinfectant solutions and rinse water. Rinse water and bleach solutions can be disposed to the sanitary sewer system in small quantities followed by flushing with copious quantities of clean water. Contact the sewer authority for approval prior to disposal. Rags, wipes, mop-heads, etc should be collected and packaged as non-hazardous solid waste.

6.) Determine the efficacy of decontamination by evaluating the *bacillus subtilis* spore strips. If required, repeat the procedures.

8. **POINT OF CONTACTS.** For additional guidance or assistance contact the following individuals:

a. Environmental Sampling. Vickie R. Hawkins, DSN 584-3118.

- b. Site Safety and Health Plan. Thomas R. Runyon, DSN 584-5227.
- c. Packaging, Labeling, and Transport. Annjanette T. Ellison, DSN 584-5228.
- d. Risk Communication. Rick Bowlus, DSN 584-5208.
- e. Site Decontamination. James R. Sheehy, DSN 584-5211.

APPENDIX A  
SAMPLE INFORMATION AND CHAIN OF CUSTODY FORM



**NOTE: ONE FORM SHOULD BE USED FOR EACH INDIVIDUAL ROOM SAMPLED**

- **Installation** – Name of military/civilian installation sampled
- **Building** – Building ID number being sampled
- **Floor** – Floor being sampled
- **Room** – Room being sampled
- **Wetting Agent Used** – Chose the sterile wetting agent used (**Water, Saline, Buffer**)
- **Sampling Date** – Date sample was collected (e.g. 01-Jan-01)
- **Sampling Time** – Time sample was taken (e.g. 16:00)
- **Collected By** - Name of person collecting the sample
- **Sample ID** – Unique Sample ID number

*AA\_BBBB\_CC\_DDDD\_FF*

<i>Building ID</i>	<i>Date</i>	<i>Floor Number</i>	<i>Room or location number</i>	<i>Station</i>
<u>AA</u>	<u>BBBB</u>	<u>CC</u>	<u>DDDD</u>	<u>FF</u>

Where:

- AA = Building ID
  - BBBB = Date (1018 = 18 Oct 2001)
  - CC = Floor number
  - DDDD = Room or location number
  - FF = Station
- **Sample Location Description** – Description of sample locations (e.g. computer keyboard).
  - **Comments** – Any comments associated with samples
  - **Site Graphic** – Drawing of room and associated sample locations
  - **Packed By** – Person packing the samples.
  - **Date Packed** – Date Samples where packed.
  - **Submitted By** – Person submitting the samples for analysis
  - **Date Submitted** – Date samples submitted for analysis
  - **Received By** – Person receiving the samples
  - **Date Received** – Date Samples where received.
  - **Laboratory** – Name of laboratory to which samplers were submitted
  - **Carrier Used** – Carrier used to deliver samples to laboratory
  - **Remarks** – Any remarks associated with sample submittal.
  - *Processed By – For laboratory use only*
  - *Date Processed – For laboratory use only*

If you have any questions, comments or if this form does not meet your needs or expectations, please contact the U.S. Army Center for Health Promotion and Preventive Medicine, Deployment Environmental Surveillance Program at DSN 584-6096 or COM 410-436-6096