



MISSISSIPPI STATE DEPARTMENT OF HEALTH

## MISSISSIPPI PUBLIC HEALTH LABORATORY (MPHL) ENVIRONMENTAL SAMPLE COLLECTION GUIDELINES FOR BIOTERRORISM TESTING

1. **Who may deliver an environmental sample to MPHL?** The Office of Emergency Planning and Response (OEPR), Federal Bureau of Investigation Agents (FBI), United States Postal Service (USPS) Inspectors, Civil Support Team (CST) or other official representatives of law enforcement or governmental agencies as coordinated with the MSDH OEPR or the FBI.
2. **Does MPHL need to know that a sample will be delivered?**
  - a. YES. Any of the agencies listed in #1 will notify the Public Health Laboratory.
  - b. One hour notification required for culture method testing
  - c. Three hour notification required for rapid method testing
3. **Where will the MPHL accept the sample?**

This information is given at the time of prior notification (See Step #2.)
4. **What documentation should accompany environmental samples?**
  - a. Your chain of custody form
  - b. A completed Field Testing Form for Environmental Samples (MSDH Form 397) showing that the sample has been field tested for radiological, explosive, chemical, biological and nerve agents  
[http://msdh.ms.gov/msdhsite/\\_static/resources/2049.pdf](http://msdh.ms.gov/msdhsite/_static/resources/2049.pdf)
5. **How should the sample be packaged?**
  - a. Use appropriate personal protective equipment according to your protocol for sample collection.
  - b. Follow the chart, "Tests for Bioterrorism Agents - Sample Submission Guidelines" (opposite side of this guide) to determine the appropriate sample amount to be collected.
  - c. Follow your protocol for sample collection.
  - d. Double bag sample in zip lock bags, then place the sample in a leak proof rigid, closed container for transport,
  - e. Decontaminate outer surfaces of containers with freshly prepared 10% bleach (1 part bleach to 9 parts water)
  - f. Place evidence tape over seal of outer bag, date, and sign name partially on tape and partially on bag.
6. **Are there size limitations for environmental sample packages?**

The package may not exceed 12 inches on any side.
7. **Are there guidelines regarding sample collection materials?**
  - a. If using a swab to collect a sample, use only non-cotton, i.e. polyester swabs.
  - b. If wipes are used, use non-cotton gauze or polyester, e.g. Handi-Wipes.
8. **What kind of turnaround time can be expected?**
  - a. Culture results have a turnaround time of:
    - i. usually 5 days, if negative, and
    - ii. 2 to 7 days if positive.
  - b. Rapid method results usually have a turnaround time of 24 hours.
  - c. Samples sent to CDC for additional testing will require a greater turnaround time.
9. **Where can I find additional information?**
  - a. MPHL Laboratory Services Guide, Appendix E, "Referral of Potential BT/CT Agents"  
[http://msdh.ms.gov/msdhsite/\\_static/resources/860.pdf](http://msdh.ms.gov/msdhsite/_static/resources/860.pdf)
  - b. Pathogen Safety Data Sheets from the Public Health Agency of Canada <http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/index-eng.php>

**Mississippi Public Health Laboratory**

**Bioterrorism Agent Sample Submission Environmental Guidelines for Laboratory Tests**

<b>Bioterrorism Agents</b>	<b>Lab Methods Available</b>	<b>Acceptable Environmental Samples</b>	<b>Minimum Quantity Needed for Testing</b>	<b>Estimated Turnaround Time</b>	<b>Prior Lab Notification</b>
<i>Bacillus anthracis</i> (Anthrax)	Culture Method	Powder - Paper - Bone - Hair - Soil - Water - Food - USPS GeneXpert Cartridge (BDS)	Solids - ½ teaspoon (0.1 g) Water - 2½ cups (500mL) Food - 3 teaspoons (11 g)	5 days if negative; 2-7 days if positive	1 hr.
	Rapid Method	Powder - Paper - Bone - Hair - Soil - Water - Surface Wipes - Swabs - USPS GeneXpert Cartridge (BDS)	¼ teaspoon (1 g or 1 mL)	24 hrs	3 hrs.
<i>Brucella spp.</i> (Brucellosis)	Culture Method	Powder - Paper - Bone - Hair - Soil - Water - Food - Food (milk/cheese)	Solids - ½ teaspoon (0.1 g) Water - 2½ cups (500mL) Food - 3 teaspoons (11 g)	5 days if negative; 2-7 days if positive	1 hr.
	Rapid Method	Powder - Paper - Bone - Hair - Soil - Water - Surface Wipes - Swabs	¼ teaspoon (1 g or 1 mL)	24 hrs.	3 hrs.
<i>Burkholderia sp.</i> (Glanders or Melioidosis)	Culture Method	Soil - Water	Solids - ½ teaspoon (0.1 g) Water - 2½ cups (500mL)	5 days if negative; 2-7 days if positive	1 hr.
	Rapid Method	Powder - Swabs - Liquids	¼ teaspoon (1 g or 1 mL)	24 hrs.	3 hrs.
<i>Coxiella burnetii</i>	Rapid Method	Powder - Swabs - Liquids	¼ teaspoon (1 g or 1 mL)	24 hrs.	3 hrs.
<i>Francisella tularensis</i> (Tularemia)	Culture Method	Powder - Paper - Bone - Hair - Soil - Water - Grass - Food	¼ teaspoon (1 g or 1 mL) Food - 3 teaspoons (11 g)	5 days if negative; 2-7 days if positive	1 hr.
	Rapid Method	Powder - Swabs - Liquids	¼ teaspoon (1 g or 1 mL)	24 hrs.	3 hrs.
<i>Vaccinia virus</i> (Smallpox vaccine)	Rapid Method	Powder - Swabs - Liquids	¼ teaspoon (1 g or 1 mL)	24 hrs.	3 hrs.
<i>Yersinia pestis</i> (Plague)	Culture Method	Powder - Paper - Hair - Soil - Water - Grass - Wood	¼ teaspoon (1 g or 1 mL) Food - 3 teaspoons (11 g)	5 days if negative; 2-7 days if positive	1 hr.
	Rapid Method	Powder - Paper - Hair - Soil - Water - Grass - Wood - Liquids - Swabs	¼ teaspoon (1 g or 1 mL)	24 hrs.	3 hrs.
Ricin	Rapid Method	Powder - Swabs - Liquids	¼ teaspoon (1 g or 1 mL)	24 hrs.	3 hrs.
<i>Clostridium botulinum</i> (Botulism)	Culture Method	Swabs - Food - Drink - Soil - Water	Solids - ½ teaspoon (0.1 g) Water - 2½ cups (500mL) Food - 3 teaspoons (11 g)	4 to 12 days	1 hr.
Staphylococcal Enterotoxin B	Conventional Method	Food	Food - 3 teaspoons (11g)	24 to 72 hrs.	1 hr.
Unknown Biological Agent	Culture Method	Powder - Paper - Bone - Hair - Soil - Water - Surface Wipes, (e.g. 4"x4" gauze) - Swabs	Solids - ½ teaspoon (0.1 g) Water - 2½ cups (500mL) Food - 3 teaspoons (11 g)	5 days if negative; 2-7 days if positive	1 hr.
	Rapid Method	Powder - Swabs - Liquids	¼ teaspoon (1 g or 1 mL)	24 hrs.	3 hrs.
*BT Multi-Panel	Rapid Method	Powder - Swabs - Liquids	¼ teaspoon (1 g or 1 mL)	24 hrs.	3 hrs.

**NOTE:** Metric quantities have been converted to approximate American quantities for field use. Turnaround times are estimates and may vary.

\*Consult the MPHL Lab Services Guide, Appendix F, "Referral of Potential BT/CT Agents" at [http://msdh.ms.gov/msdhsite/\\_static/resources/860.pdf](http://msdh.ms.gov/msdhsite/_static/resources/860.pdf)