

# Emergency Flood Recovery

FOOD PROTECTION CONNECTION



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In late summer, an unprecedented number of hurricanes made landfall with devastating results. In their wake, floodwaters destroyed countless structures and displaced thousands of people. Disruptions caused by catastrophic events such as these often create health-related issues. This article provides food safety suggestions and information from the federal government for foodservice establishments resuming business in the aftermath of a natural or other disaster resulting in flooding.

Unfortunately, flooding usually triggers disruption of power and loss of water supply. You need electricity

to re-open! Remember that you must use a potable water supply when decontaminating your facility.

Prior to reopening, the facility's person in charge (PIC) should conduct a complete self-inspection to ensure that normal operations can be resumed safely and without compromising food safety. Establishments are typically required to cease operations in an emergency, and those affected by a natural disaster should not reopen until authorization is granted by the licensing jurisdiction. This may require a reopening inspection from your regulatory authority.

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## SANITIZING

Decontamination and sanitization procedures using chemical sanitization should be used on equipment and structural surfaces that are salvageable. When you decontaminate, do so in a manner that eliminates any harmful microorganisms, chemical residues, or filth that could pose a food safety risk. If stronger chemical concentrations are used, you will likely need to follow the sanitizing step with a clean potable water rinse. Foodservice sanitizer options include:

- Unscented chlorine bleach at a concentration of 100 ppm (1 tablespoon of bleach in 1 gallon of potable water),
- Quaternary ammonium at a concentration of 150-400 ppm, or
- Other EPA-approved sanitizers for foodservice facilities.

## PEST CONTROL

- Ensure that any rodents/pests that may have entered the facility are no longer present.
- Remove dead pests and sanitize any food-contact surfaces that have come in contact with pests.
- Seal all openings into the facility to prevent future entry of pests or rodents.

- Dispose of contaminated or spoiled solid foods in closed containers for removal to prevent rodent and fly harborage.

## DAMAGED FOOD PRODUCTS

- Discard all food and packaging materials that have been submerged in or splashed by floodwaters, unless the food is in a hermetically sealed can that has not been damaged.
- Destroy refrigerated and frozen foods, such as meat, poultry, shell eggs, egg products, and milk, which have been immersed in or splashed by floodwaters. Some good advice is: **if in doubt, throw it out.**
- Inspect canned foods and discard any food in damaged cans. Can damage is identified by swelling, leakage, punctures, holes, fractures, extensive deep rusting, or crushing/denting severe enough to prevent normal stacking or opening with a manual wheel-type can opener.
- Do not recondition products in containers with screw-caps, snap-lids, crimped-caps (soda pop bottles), twist-caps, flip-top, snap-open, and similar type closures that

**DESTROY REFRIGERATED AND FROZEN FOODS** which have been immersed in or splashed by floodwaters. When in doubt, throw it out.

have been submerged in floodwaters.

- Do not salvage food packed in plastic, paper, cardboard, cloth, and similar containers that have been water damaged.
- Undamaged commercially prepared foods in all-metal cans or retort pouches can be saved if you remove labels that can come off, thoroughly wash the cans, rinse them, and then disinfect them with a sanitizing solution consisting of 1 tablespoon of bleach per gallon of potable water. Lay containers out to air dry. Do not stack them to dry. Finally, relabel containers that had the

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labels removed, including the name of the product, ingredients, net weight, manufacturer/distributor information, and expiration date (if originally labeled with one).

- Complete proper and safe disposal of condemned food items in a manner consistent with federal, state, and local solid waste storage, transportation, and disposal regulations. If necessary, denature or further destroy foods to ensure these products do not reappear as damaged

## THOROUGHLY

**WASH** all physical facility interior surfaces (e.g., floors, walls, and ceilings) using potable water and a hot detergent solution...



or salvaged merchandise for human consumption.

## PHYSICAL FACILITIES

- If you have a well that has been flooded, the water should be disinfected and tested to confirm it is safe after floodwaters recede. If you suspect that your well may be contaminated, contact your state's water authority for further instructions and guidance.
- Thoroughly wash all physical facility interior surfaces (e.g., floors, walls, and ceilings), using potable water and a hot detergent solution, rinse free of detergents and residues, and treat with an approved sanitizing solution. Follow all directions on chemicals.
- Mold contamination is a concern. Structural components of the building (e.g., walls, piping, ceiling, and HVAC system/ventilation systems) affected by floodwaters or other damage from the natural disaster should be cleaned, repaired, and disinfected, where possible. Remove and destroy any wall board that has been irreparably damaged by floodwaters or mold. For example, warped walls, walls with

**THOROUGHLY WASH** metal pans, ceramic dishes, and utensils (including can openers) with soap and hot water.



holes or other similar damage that would impact food safety. Cement walls that have mold damage can be reconditioned.

- Other building and structural issues should be addressed with your local building code officials.
- Any exhaust systems and hoods should be thoroughly cleaned and freed of any debris. Consult professional service technicians as needed. Water damaged ventilation systems that cannot be thoroughly cleaned and sanitized should be removed and replaced. In all cases, replace all ventilation air filters.
- Be cautious of equipment and building structures that floodwaters may have drawn up into, such as hollow equipment legs, insulation areas between walls and walk-in coolers, and similar.

## EQUIPMENT

- Thoroughly wash metal pans, ceramic dishes, and utensils (including can openers) with soap and hot water. Rinse, and then sanitize them by boiling in potable water or immersing them for 15 minutes in a solution of 1 tablespoon of unscented liquid chlorine bleach per

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gallon of potable water or other approved sanitizer. Follow instructions on the sanitizer label for appropriate concentration.

- Thoroughly wash countertops, equipment, and non-food contact surfaces with soap and hot water. Rinse, and then sanitize by applying a solution of 1 tablespoon of unscented liquid chlorine bleach per gallon of potable water or other approved sanitizer. Allow to air dry.
- A dishwasher or three-compartment sink that has been cleaned of all floodwater residue and sanitized properly should be used to wash, rinse, and sanitize equipment and utensils using potable water, and:
  - > Run the empty dishwasher through the wash-rinse-sanitize cycle three times to flush the water lines and assure that the dishwasher is cleaned and sanitized internally before washing equipment and utensils in it.
  - > Chlorine bleach at a concentration of 50-100 ppm or other approved sanitizers should be provided for sanitizing food contact surfaces and equipment.
  - > Mechanical dishwashing machines should provide a final sanitizing rinse of either 50-100 ppm chlorine (for chemical sanitizing machines) or a 180°F final sanitizing rinse (for hot water sanitizing machines).
  - > An approved test kit should be available to ensure appropriate sanitizer strength for chemical sanitizing, and a maximum registering thermometer or temperature sensitive tape should be available to check that the hot water reaches 180°F or the utensil surface reaches a temperature of 160°F.
- Refrigerated display and storage cases and other refrigerator equipment used to store food should be cleared of all contaminated products and their juices prior to cleaning.
- Refrigerated storage equipment should be thoroughly washed inside and outside with a hot detergent solution and rinsed free of detergents and residues. (Special attention should be given to lighting, drainage areas, ventilation vents, corners, cracks and crevices, door handles and door gaskets.) Treat all clean surfaces with an approved sanitizing solution.
- If the insulation, door gaskets, hoses, etc. are damaged by flood or liquefied food items, then replace or discard

these refrigerated display cases and storage cases and other refrigerator equipment.

- All filters on equipment should be removed and replaced if not designed to be cleaned/sanitized in place.
- Replace all ice machine filters and beverage dispenser filters and flush all water lines, including steam water lines and ice machine water lines, for 10 to 15 minutes.
- Discard all ice in ice machines; clean and sanitize the interior surfaces (ice making compartment and storage bin); run the ice through three cycles; and discard ice with each cycle.
- All sinks should be thoroughly cleaned and sanitized before resuming use.
- Equipment should be inspected to ensure it is operational and that all aspects of its integrity are maintained.
- Stove units should be thoroughly cleaned and checked by the fire department, local utility company, or authorized service representative prior to use.

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## ALCOHOL HAND GELS

may only be used after handwashing.

Remember, alcohol hand gels are not a substitute for soap and water handwashing.



## MAINTAINING FOOD TEMPERATURES

- Verify that all open-top and refrigerated and freezer display cases, walk-in refrigerators, and walk-in freezers are capable of consistently maintaining cold holding temperatures ( $\leq 41^{\circ}\text{F}$  or in a frozen state) before food items are placed in the units.
- Ensure that the equipment can heat to the appropriate cooking temperature hot ( $\leq 135^{\circ}\text{F}$ ) for raw animal foods and to cool to maintain potentially hazardous foods cold at the appropriate ( $\leq 41^{\circ}\text{F}$ ) temperature.
- Verify that all equipment used for food preparation (e.g., cooking, cooling, and reheating) is functioning and properly calibrated prior to use.

## EMPLOYEES

- Soap and potable running, warm water (at least  $100^{\circ}\text{F}$ ) should always be used to wash hands.
- Alcohol hand gels may only be used after handwashing. Alcohol hand gels are ineffective against germs on soiled hands and are therefore not a substitute for soap and water handwashing.
- Employees should not touch ready-to-eat foods with their bare hands, but instead should use tongs, deli paper, or single-use, disposable gloves.
- Remember:
  - > Employees with open wounds should not work with hands-on preparation of foods or with cleaned and sanitized food contact surfaces or single-service/single-use utensils. If these infected wounds are covered with a double, waterproof barrier such as a finger cot or water-tight bandage and plastic gloves, the employee may continue to work with food.
  - > Employees sick with vomiting, diarrhea, or jaundice should not be working in the establishment and may not return to work until at least 24 hours after the symptoms cease.

## FOOD SOURCE AND RESTOCKING

- All foods, including raw, fresh, frozen, pre-packaged, shelf-stable, and ready-to-eat foods, should only be received from a licensed and an approved food source. This includes food distributors and vendors licensed by the local or state regulatory food authority.



### VERIFY THAT ALL EQUIPMENT USED FOR

food preparation (e.g., cooking, cooling, and reheating) is functioning and properly calibrated prior to use.

- Food should be received by a person who is responsible for ensuring that food packages meet temperature requirements and are intact with no breaks, seams, or other openings. Canned foods should not be swollen or have any dents or punctures in the cans.
- Foods requiring temperature control should be received in a frozen state or at temperatures less than  $41^{\circ}\text{F}$  for refrigerated storage.

## U.S. GOVERNMENT RESOURCES

- Consult the U.S. Department of Agriculture's Food Safety and Inspection Service for guidance on disaster response regarding meat, poultry, and egg products at [www.FSIS.USDA.gov](http://www.FSIS.USDA.gov)
- Consult the U.S. Food and Drug Administration for guidance on disaster response regarding all other food products and for science-based information on food safety for retail and foodservice industries at [www.FDA.gov](http://www.FDA.gov)
- Consult the U.S. Environmental Protection Agency for guidance on disaster response regarding potable water supply, wastewater, and soil erosion and contamination at [www.EPA.gov](http://www.EPA.gov) **E**

See page 6 for CE questions

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Basic American Foods is generously sponsoring 1 free Sanitation continuing education (CE) hour for CDMs who read **Emergency Flood Recovery** and answer the following CE questions through November 9, 2017. You must log into the **ANFP Marketplace** and access the online CE quiz there for this members-only offer. Follow the directions on the quiz below to access your free SAN CE.

### CE Questions: Food Protection Connection



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1. Reopening after a flood may require
  - A. A special permit from your code officer
  - B. A reopening inspection by your regulatory agency
  - C. A certified audit be performed
2. When you decontaminate,
  - A. Do so in a manner that eliminates any harmful microorganisms, chemical residues, or filth that could pose a food safety risk
  - B. Do so in a manner that only eliminates any harmful microorganisms
  - C. Do so in a manner that makes your facility smell better
3. Only recondition products
  - A. In containers with screw-caps, snap-lids, crimped-caps (soda pop bottles), twist-caps, flip-tops, snap-open, and similar type closures that have been submerged in floodwaters
  - B. Packed in plastic, paper, cardboard, cloth, and similar containers that have been water damaged
  - C. That are undamaged, commercially prepared foods in all-metal cans or retort pouches that can be saved if you remove labels that can come off, thoroughly wash the cans, rinse them, and then disinfect them
4. Verify that
  - A. All equipment used for food preparation (e.g., cooking, cooling, and reheating) is functioning and properly calibrated prior to use
  - B. All employees are reporting to help with clean-up efforts
  - C. All equipment has been cleaned but not sanitized prior to use
5. When restocking, food should be received only from
  - A. Persons who are trying to sell off products impacted by the flood
  - B. A licensed and an approved food source
  - C. A friend who is making food at home to help get your business started up quickly
6. Which of the following may not be used when sanitizing?
  - A. Unscented chlorine bleach at a concentration of 100 ppm (1 tablespoon of bleach in 1 gallon of potable water)
  - B. Quaternary ammonium at a concentration of 150-400 ppm
  - C. Any non-EPA registered chemical for industrial cleaning
7. When in doubt
  - A. Eat it
  - B. Give it to a friend
  - C. Throw it out

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