

FLOOD CLEANUP HEALTH & SAFETY INFORMATION



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Yukon-Kuskokwim
HEALTH CORPORATION

OFFICE OF ENVIRONMENTAL HEALTH & ENGINEERING

Protect yourself from the FLOOD CRUD!

What can I do to protect myself and my family if my village floods?



Stay out of flood water.

Do not allow children to play in or around flood waters.

Flood water contains germs that will make you and your family sick. It should not be used for drinking, cooking or bathing. Drinking water should come from the local water plant unless otherwise noted.

Always wash your hands with soap and water that has been boiled or disinfected before preparing or eating food, after toilet use, after participating in flood cleanup activities, and after handling articles contaminated with flood water or sewage.

How can I make my water safe to use?

Boil your water before use for at least two minutes to kill harmful bacteria and parasites.

You can also treat water with chlorine tablets, iodine tablets, or clorox bleach.

- For household chlorine bleach, add 1/8 teaspoon of bleach per gallon of water if the water is clear.
- For cloudy water, add 1/4 teaspoon of bleach per gallon. Mix the solution thoroughly and let it stand for about 30 minutes before using.

How can I clean my home after a flood?

Cleaning up after a flood should start with drying anything that is wet. Remove everything that is wet and start cleaning inside the house

Wall and hard-surfaces should be cleaned with soap and water and disinfected with a solution of 1 cup of bleach to 5 gallons of water

Wash all linens and clothing in hot water.

For items that cannot be washed, air dry them in the sun and then spray them thoroughly with a disinfectant.

If you have ANY flood related questions please call your YKHC Environmental Health Officer at 543-6420 or toll free 1-800-478-6599



BEFORE THE FLOOD

Precautions for Flooding Emergencies

- Move electrical motors, controls, and other equipment to dry areas if time allows. Disconnect electrical equipment that cannot be moved.
- For important items that do not get packed for evacuation, store in watertight containers (e.g. totes) and elevate.
- Move vehicles that will not be used for evacuation to higher ground.
- If you have a private well: Check the area around your well to help prevent contamination.
 - o Make sure the well head is covered and watertight.
 - o Replace the well cap if it is cracked, damaged or missing.
 - o Well casing should extend more than 12 inches above the ground, and water should drain away from the base.
 - o If damage from ice flow is a concern, consider using sandbags to protect your well casing.
- Secure any loose items around the home that may be swept away.
- Make sure your phone is fully charged.
- Prioritize the safety of your family, household members, and pets.
 - o If you have a dog tied up outside and the flood waters are rising, bring the dog inside.
 - o If you cannot let the dog inside, let it off it's chain so it can find higher ground.
- Stay up to date on the current weather conditions and warnings.
- If you have a rain catch barrel, put it in storage during flooding so it cannot float away or become contaminated.

REMEMBER: ~ Elevate – Unplug – Shut off – and Evacuate ~

BE PREPARED TO EVACUATE

- Know where your community's evacuation site will be ahead of time. In many communities, the school is typically the designated evacuation shelter.
- Prepare a "go-bag" to take with you to the evacuation shelter containing:

- o Medications and necessary medical equipment - o Personal information (e.g. photo ID, Social Security Card, etc.) - o Non-perishable food (especially if there are any special dietary needs/restrictions) - o Flashlight - o Something to entertain the kids and yourself	(e.g. books, tablet, coloring books, etc.) - o Change of clothes - o Phone charger - o Water bottle - o First aid kit - o Rope
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- If traveling by boat, canoe, raft, etc.,
 - o Wear a personal floatation device at all times.
 - o Use caution, as flood waters are likely to be very cold and swift.
 - o NEVER DRINK FLOOD WATER.
 - o Watch for large limbs and debris as you move to prevent damaging the boat.
 - o Be aware of fast-moving water.
- If traveling by vehicle (car or 4-wheeler)
 - o Don't drive through water you don't know the depth of.
 - o If you must cross flood water, drive slowly and steadily.
 - o Be aware of downed power lines.
 - o Test your breaks after passing through water.
 - o Watch for large limbs and debris that could damage your vehicle.

AFTER THE FLOOD

Precautions for Flooded Areas

Personal

- Flood waters may contain many health and safety hazards, such as; bacteria, viruses, fuel, sewage, animal waste, chemicals, and physical debris like tree limbs, downed power lines, metal objects, etc.
- DO NOT let kids play in or around flood water.
- DO NOT drink, bathe, or ingest flood water.
- DO NOT eat food contaminated with flood water.
- Report illnesses to the local health clinic as soon as possible.
- Wash hands thoroughly with soap and water after handling contaminated materials or flood water, especially before touching your face and preparing/eating food. Use hand sanitizer if soap and water are not available.
- Report any diarrhea, upset stomach, or sudden illness to the local clinic.
- Do not allow children to play in or around flood waters.
- Wear appropriate PPE (i.e. gloves, mask, boots, etc.) when entering structures effected by flood waters.
- Inspect the home before starting the clean-up process to ensure it is safe to enter and work inside the structure.
- If there was water damage inside the home, try to dry it out as soon as possible to prevent mold growth. Open doors/windows and use fans if possible.
- TAKE PHOTOS TO DOCUMENT DAMAGE. Photos can be critical later for recovery assistance that may be offered from FEMA or the Alaska State Emergency Operations Center.

Water & Sewer Services

- For piped water/sewer communities:
 - o Pay attention for any advisories against using the piped water/sewer.
 - o If the utility operators have not issued any warnings against using the water or sewer system, continue using water and flushing toilets.
 - o If there have been advisories to not use water/sewer OR you are unsure about the status of the water/sewer system, please use a honey bucket. DO NOT dump outside.
- For hauled water/sewer communities:
 - o If it's safe to do so, inspect your sewer tank and pipe connections for damages. If there is any damage to the tank or piping, use a honey bucket until repairs can be completed. DO NOT dump outside.
 - o If you're unsure about the status of water or sewer haul services or you won't be able to self-haul for any period of time:
 - » Limit your household's water usage to conserve water.
 - » Use a honey bucket. DO NOT dump outside. **Follow local guidance for honey bucket disposal.**

Power & Gas

- Shut off electrical power at the breaker and disconnect propane tanks to avoid fire, electrocution, or explosions.
- Leave your home immediately if you smell gas or suspect a leak.
- Keep portable generators in a well-ventilated area or outside the home.
- Make sure any generator cords are placed on a dry surface.

FOOD - Flooded, Frozen, and Refrigerated

- Do not eat any foods that may have come in direct contact with floodwater.
- Store-bought canned foods that are undamaged may be saved by removing labels and thoroughly washing, then disinfecting the cans.

- Home-canned foods that were in contact with flood water should be thrown away.
- If your power is out:
 - Consider asking friends, family, or local businesses with power if they can help store your cold foods temporarily.
- Most thawed food can be eaten or refrozen if kept cold
 - See additional guidance for refrigerated and frozen food
- Throw out any food that has been at room temperature for 2+ hours.
- Refrigerators can keep food cool for about 4 hours without power if unopened.
- **When in doubt, throw it out!** If you're unsure if any food items are safe to eat, it's always best to throw them out.

REFRIGERATED FOOD AND POWER OUTAGES: When to save it and when to throw it out

foodsafety.gov

Type of Food	Held above 40°F (4°C) for more than 2 hours
Meat, poultry, seafood	
Raw or leftover cooked meat, poultry, fish, or seafood; soy meat substitutes	Discard
Thawing meat or poultry	Discard
Salads: Meat, tuna, shrimp, chicken, or egg salad	Discard
Gravy, stuffing, broth	Discard
Lunchmeats, hot dogs, bacon, sausage, dried beef	Discard
Pizza with any topping	Discard
Canned hams labeled "Keep Refrigerated"	Discard
Canned meats and fish, opened	Discard
Casseroles, soups, stews	Discard
Cheese	
Soft cheeses: blue/bleu, Roquefort, Brie, Camembert, cottage, cream, Edam, Monterey Jack, ricotta, mozzarella, Muenster, Neufchatel, queso blanco, queso fresco	Discard
Hard cheeses: Cheddar, Colby, Swiss, Parmesan, provolone, Romano	Keep
Processed cheeses	Keep
Shredded cheeses	Discard
Low-fat cheeses	Discard
Grated Parmesan, Romano, or combination (in can or jar)	Keep

Type of Food	Held above 40°F (4°C) for more than 2 hours
Dairy	
Milk, cream, sour cream, buttermilk, evaporated milk, yogurt, eggnog, soy milk	Discard
Butter, margarine	Keep
Baby formula, opened	Discard
Eggs	
Fresh shell eggs, eggs hard-cooked in shell, egg dishes, egg products	Discard
Custards and puddings, quiche	Discard
Fruits	
Fresh fruits, cut	Discard
Fresh fruits, uncut	Keep
Fruit juices, opened	Keep
Canned fruits, opened	Keep
Dried fruits, raisins, candied fruits, dates	Keep
Sliced or shredded coconut	Discard
Sauces, Spreads, Jams	
Opened mayonnaise, tartar sauce, horseradish	Discard (if above 50°F (10°C) for more than 8 hrs)
Peanut butter	Keep
Jelly, relish, taco sauce, mustard, catsup, olives, pickles	Keep
Worcestershire, soy, barbecue, hoisin sauces	Keep
Fish sauces, oyster sauce	Discard
Opened vinegar-based dressings	Keep
Opened creamy-based dressings	Discard
Spaghetti sauce, opened	Discard

Type of Food	Held above 40°F (4°C) for more than 2 hours
Bread, cakes, cookies, pasta, grains	
Bread, rolls, cakes, muffins, quick breads, tortillas	Keep
Refrigerator biscuits, rolls, cookie dough	Discard
Cooked pasta, rice, potatoes	Discard
Pasta salads with mayonnaise or vinaigrette	Discard
Fresh pasta	Discard
Cheesecake	Discard
Breakfast foods: waffles, pancakes, bagels	Keep
Pies and pastry	
Cream filled pastries	Discard
Pies: Any with filling containing eggs or milk, e.g., custard, cheese-filled, or chiffon; quiche.	Discard
Fruit pies	Keep

Type of Food	Held above 40°F (4°C) for more than 2 hours
Vegetables	
Fresh vegetables, cut	Discard
Fresh vegetables, uncut	Keep
Fresh mushrooms, herbs, spices	Keep
Greens, pre-cut, pre-washed, packaged	Discard
Vegetables, cooked	Discard
Tofu, cooked	Discard
Vegetable juice, opened	Discard
Baked potatoes	Discard
Commercial garlic in oil	Discard
Potato salad	Discard
Casseroles, soups, stews	Discard

Type of food	Contains ice crystals and feels cold as if refrigerated	Thawed and held above 40°F (4°C) for more than 2 hours
Meat, poultry, seafood		
Meat, poultry, seafood – all types of cuts	Refreeze	Discard
stews, soups	Refreeze	Discard
Dairy		
Milk	Refreeze	
(some loss of texture)	Discard	
Eggs (out of shell) and egg products	Refreeze	Discard
Ice cream, frozen yogurt	Discard	Discard
Cheese (soft and semi-soft)	Refreeze (some loss of texture)	Discard
Hard cheeses	Refreeze	Refreeze
Shredded cheeses	Refreeze	Discard
Cheesecake	Refreeze	Discard
Fruits		
Juices	Refreeze	Refreeze (discard if mold, yeasty smell, or sliminess develops)
Home or commercially packaged	Refreeze (will change texture and flavor)	Refreeze (discard if mold, yeasty smell, or sliminess develops)
Vegetables		
Juices	Refreeze	Discard after held above 40°F (4°C) for 6 hours
Home or commercially packaged or blanched	Refreeze (may suffer texture and flavor loss)	Discard after held above 40°F (4°C) for 6 hours

Type of food	Contains ice crystals and feels cold as if refrigerated	Thawed and held above 40°F (4°C) for more than 2 hours
Breads and pastries		
Breads, rolls, muffins, cakes (without custard fillings)	Refreeze	Refreeze
Cakes, pies, pastries with custard or cheese filling	Refreeze	Discard
Pie crusts, commercial and homemade bread dough	Refreeze (some quality loss may occur)	Refreeze (quality loss is considerable)
Other Foods		
Casseroles: pasta, rice-based	Refreeze	Discard
Flour, cornmeal, nuts	Refreeze	Refreeze
Breakfast items: waffles, pancakes, bagels	Refreeze	Refreeze
Frozen meal, entree, specialty item (pizza, sausage and biscuit, meat pie, convenience foods)	Refreeze	Discard

AFTER THE FLOOD

Cleaning and Sanitizing with Bleach

Cleaning and sanitizing your household after an emergency is essential to help prevent the spread of illness and disease.

Important Facts:

- Follow the directions for the products you are using.
- NEVER mix bleach with ammonia or any other cleaner.
- Wear appropriate PPE:
 - o KN95 mask
 - o Nitrile/rubber gloves and
 - o Rubber/non-porous boots
- When using disinfectants or chemical cleaning products indoors, open windows and doors to bring fresh air into the area.
- Always wash children's toys and dishes with soap and clean water after sanitizing them

Cleaning and Sanitizing with Bleach:

Use regular unscented 5% - 6% household bleach and follow the instructions below:

Area or Item	Amount of Bleach	Amount of Water	Steps
CLEAN & SANITIZE: Food Contact Areas & Canned Food			
Food contact areas (Kitchen counters, kitchen sink, dishes, refrigerator, etc.) <i>Throw away: Wood cutting boards and wooden spoons, baby bottle nipples and pacifiers</i>	1 teaspoon	1 gallon	1. Wash surfaces with soap and warm, clean water 2. Rinse with clean water 3. Sanitize with bleach mixture 4. Allow to air dry 5. Wash dishes with soap and clean water
Food cans that are not bulging, open, or otherwise damaged	1 cup	5 gallons	1. Remove paper labels 2. Wash cans with soap and water 3. Rinse with clean water 4. Dip cans into bleach mixture 5. Allow to air dry 6. Re-label with permanent marker

Area or Item	Amount of Bleach	Amount of Water	Steps
CLEAN AND SANITIZE: Other Hard/Non-porous Household Surfaces and Items			
Non-porous/hard surfaces (Floors, toys, tools, etc.)	1 cup	5 gallons	1. Wash surfaces with soap and warm, clean water 2. Rinse with clean water 3. Sanitize with bleach mixture 4. Allow to air dry 5. Wash toys that kids will chew on with soap and clean water before giving them back
REMOVE MOLD: Hard/Non-porous Surfaces			
Mold growth on non-porous/hard surfaces Ex: Floors, stoves, sinks, certain toys, countertops, flatware, plates and tools	1 cup	1 gallon	1. Wash surfaces with soap and warm, clean water to remove dirt 2. Rinse with clean water 3. Sanitize with bleach mixture 4. If the surface is rough, scrub with a stiff brush 5. Rinse surfaces with clean water 6. Allow to air dry

AFTER THE FLOOD

Mold in the Home

About Mold

- KEY POINTS: Keep it CLEAN, Keep it DRY, then DISINFECT.
- Mold can travel through the air and trigger allergic reactions, asthma, infections, and other respiratory illnesses.
- Mold thrives and multiplies in moist environments.
- Mold often appears white, orange, green, or black.
- Mold is commonly found on water-damaged floors, walls, ceilings and furniture.
- Mold is usually accompanied by a musty, earthy odor.

High-Risk Individuals

- Infants and children
- Immuno-compromised patients
- Elders
- Pregnant women

Common Symptoms of Mold Exposure

- Wheezing and difficulty breathing
- Nasal and sinus congestion
- Burning, watering, or reddening of eyes
- Blurred vision and light sensitivity
- Dry, hacking cough
- Nose, throat, or skin irritation
- Aches and pains
- Fever

Clean-up Facts:

- Make sure to clean items with soap and warm water.
- Disinfect items using a bleach solution.
- Mold clean-up will not be effective if you do not remove the mud and dirt first.
- DO NOT mix bleach with ammonia or any other cleaners.
- Make sure to wear appropriate PPE (gloves, mask, boots, goggles, etc.).
- Work in a well-ventilated area by opening doors and windows.
- Use a moisture meter to help determine if drywall and wood are dry.
- Do your best to clean, disinfect and dry out the building within 24 to 28 hours.
- If you can control the moisture in your home, you can help prevent mold growth.
- Consider removing wet drywall or insulation so mold won't be a future issue.

Clean-up Steps:

1. Inspect the home to ensure it is safe to enter and begin cleaning up.
2. Create a clean-up station so that you have everything you need ready when you need it.
3. Put on personal protective equipment: Gloves, safety glasses/goggles, mask, boots, etc.
4. Open doors and windows to ventilate and to help start drying affected areas.
5. Use a shovel to remove large amounts of mud or silt.
6. Discard all porous materials such as carpets, upholstered furniture, and mattresses that were saturated with flood waters or have mold growth.
7. Non-porous materials, such as glass, plastic, or metal, can be kept after thoroughly cleaning and disinfecting.
8. Remove any visible mold by cleaning the affected area with warm water and detergent.
9. Disinfect the surface with a 10% bleach solution (1 cup bleach + 1 gallon water) to kill any remaining mold.

DO NOT mix bleach with ammonia or any other cleaners.

- o Bleach can be corrosive to electrical wiring.
10. Allow the surface to air-dry.

Clean-Up Station (Suggested Supplies):

- Table or a flat space that is dry
- Drinking water (with a lid or cap)
- First aid kit
- A way to clean hands: soap and water, hand sanitizer, hand wipes
- Paper towels
- Spray bottle
- Soapy water for cleaning
- Rinse water
- Bleach
- Bleach solution for disinfection
- Trash bag

AFTER THE FLOOD

Emergency Well Disinfection

If your private well was flooded, it should be tested for bacteria as soon as possible. Call the YKHC Water Lab for a free bacteria test kit at 907-543-6420.

If your private well might have been contaminated, until you can confirm it is safe to drink, it is recommended to boil water for 2 minutes to kill any bacteria and viruses. Physical contaminants can be removed by filtering the water.

WELL DISINFECTION STEPS

1. Flush contaminated water from your well by pumping it or turning on an outside faucet for 30 minutes.
2. Using the chart below, determine how much bleach you will need to add based on the depth and diameter of your well casing.
3. Add the appropriate amount of unscented household bleach with water and pour into the well.
 - Ensure that you are following the proper ratios based on the chart
4. Add water to the well using a hose until you start to smell chlorine.
5. Rinse the casing and cover the well casing to prevent anything from falling down the well.
6. Run every faucet inside and outside the home, until you smell chlorine, then turn it off.
7. Let the chlorinated water sit in your pipes for 24 hours.

DO NOT drink or cook with the well water during this time frame.

8. After 24 hours, use the outside hose to run water till you can no longer smell chlorine.

DO NOT water plants or put large amounts of chlorinated water into septic systems, streams, ponds, or lakes.

9. Flush the rest of the plumbing system by running water from all faucets until you no longer smell chlorine.
10. Contact YKHC OEHE (543-6420) for a free water sample kit to confirm your water is safe to drink.

Amount of Unscented Household Bleach (5.25% available chlorine)

*Per 5 Gallons of Water

Size of Casing	50 ft. deep	100 ft. deep	200 ft. deep	400 ft. deep
2" casing	5.5 tablespoons	1.2 cup	1 cup	2.1 cups
4" casing	1 cup	2 cups	4 cups or 0.25 gal	8 cups or 0.5 gal
6" casing	2.5 cups	4.6 cups	9.5 cups or 0.58 gal	20 cups or 1.2 gal
8" casing	4 cups or 0.25 gal	8 cups or 0.5 gal	16 cups or 1 gal	34 cups or 1.2 gal
10" casing	6.5 cups or 0.5 gal	13 cups or 0.8 gal	26 cups or 1.62 gal	52 cups or 3.25 gal
24" casing	37 cups or 2.33 gal	74.75 cups or 4.7 gal	9.3 gal	18.6 gal
36" casing	5.25 gal	10.5 gal	21 gal	42 gal

Flood Resources References:

The documents listed below were used as resources to compile the information presented in this packet.

1. Cleaning and Sanitizing with Bleach after an Emergency, CDC
<https://www.cdc.gov/natural-disasters/safety/how-to-safely-clean-and-sanitize-with-bleach.html>
2. Refrigerated Food and Power Outages: When to save it and When to throw it out, Foodsafety.gov
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4. A Field Guide for Flood Home Clean up, National Center for Healthy Housing
https://nchh.org/resource/flood-guide_a-field-guide-for-flooded-home-cleanup/
5. What to do AFTER THE FLOOD Emergency Flood Information, University of Alaska, Fairbanks Document
6. Flood Information: Emergency Health Precautions for Flooded Areas, North Dakota Department of Health
https://deq.nd.gov/Flood/DoH_Files/emergencyhealthprec.pdf
7. Flood Information: Mold in homes, North Dakota Department of Health
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10. Mold in my home: What do I do?, North Dakota Department of Health
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