

## **SANITATION**

### **Did you know?**

- History repeats itself – prepare for the worst!
- Leading cause of death in the world is dysentery (uncontrolled diarrhea) from polluted water and unsanitary conditions.
- Human waste is one of the most dangerous things on earth. Fecal matter is the most deadly of all.
- When the sewer system is disrupted, think “downstream” - where you are in the line.

### **Human Waste Disposal:**

- A composting toilet is the best possible option. A self-contained system that will not be disrupted and will keep functioning normally.
- Option #1 (Best Option): Convert your existing wet flush system to a dry disposal system.
  - Turn off water at toilet.
  - Use water in toilet tank to wash and sanitize the toilet thoroughly and then make tank and bowl dry.
  - Plug the hole in toilet bowl with a foam-filled rubber ball. This will prevent sewer gases, insects and rodents from coming up the drain into your house. If no ball is available, saturate a cloth with shortening and plug hole.
  - Line the toilet bowl with a heavy-duty plastic bag.
  - Separate liquid from solid. Use the toilet bowl only for solids. Do not use the toilet bowl for urine. (Urinate into a container and diluted with water so it will not burn plants. Urine is an excellent fertilizer. Put it on the soil, but not onto areas where root crops are currently growing.)
  - Keep a bucket filled with sawdust, wood chips, kitty litter, dry dirt, etc. next to the toilet with a soup can and a stick or dowel. After using the toilet, cover contents with sawdust, etc. Use the stick to spread it around to ensure complete coverage.
  - Cover bowl by placing a piece of cardboard between the bowl and the seat. Close lid after each use. Place heavy object on lid to keep curious young hands out.
  - When bag is full, place in something sturdy, like a cardboard box, and carry it outside.
  - Dig a deep hole (3-4 ft.). Dump contents of bag into ground and throw the bag on top. Cover with about 2” of dirt (lime pickles waste and keeps it from decomposing, even though it masks odors.) You want the waste to come in contact with the earth to assist the decomposing process, do not drop closed plastic bags into the hole.
  - Between each bag dump, put a board over hole and anchor with bricks to keep animals out and humans from falling in.
  - When hole is filled to within 6 to 8 inches of the top, cover with about 2” of soil. Cover that soil with about 1” of Lime, place a layer of newspaper on top of the

lime and mound the remaining earth over top of the hole. (The Lime is to discourage dogs from digging up the waste.)

- Winter considerations:
  - Insulate ground with bags of leaves or straw so you can keep ground from freezing and dig holes.
  - Put bags of waste into metal trash cans or open head 55 gal drums.
  - Securely tie or clamp down lid. Keep container on north side of house where sun won't warm it. Once ground thaws, dig hole and follow directions above.
- Option #2:
  - Porta-potty or bucket with a toilet seat.
- Option #3: These are not the only options, feel free to research others.

### **Protecting your Home Environment:**

- Have on hand non-porous rubber balls of different sizes. Think “downstream.”
  - Basement floor drains – remove grate and put a ball in (there are also commercial products available that swell to fit the hole.) This will prevent basement sewer from backing up into your house. Loosen the floor drain cover screws now.
  - Basement bathtub – jam a small rubber ball into the drain.
  - Basement toilet – pull toilet off and plug hole.
  - Plug EVERY basement drain!
  - The best solution is to install a “Backwater valve” – This is a one way check valve that will automatically stop the sewage from backing up into the house, and works especially well for sudden flooding backups.
  - If all else fails, locate “cleanout” near house in your yard. Learn how to plug the line. This will stop the sewage line at street level before it reaches your house. Again, remember where you are in the line.

### **Personal Hygiene:**

- Personal wipes (shower in a box) for short periods of emergency. Store bought brands not packaged for long-term storage. Vacuum seal will lengthen storage time. His favorite brand - “Kozy Kids” by Amway, they store well; he’s used them for years.
- Waterless hand cleaners/sanitizers. Conserves water use. Read the labels! Don’t use products with isopropyl alcohol which is absorbed by the body and is toxic. You want the active ingredient to be ethyl (grain) alcohol.
- Bar soap spreads disease. Do not share your bar of soap! Better to use liquid soap in a pump bottle.
- Plan on storing 1 gallon of water per person, per day for drinking only.
- Toilet paper – can use phone books, newspapers or cloth when you run out of the real stuff. Save your old sheets, shirts, etc. and cut into squares. Wash after use.
- Feminine hygiene – “Glad rags” reusable, washable sanitary pads. “Keeper Moon Cup” reusable, washable “tampon.” (Available at [www.parleyshardware.com](http://www.parleyshardware.com))

### **Personal Protection:**

- Buy vinyl or latex disposable gloves by the box. Have LOTS on hand.
- Masks (Available at [www.parleyshardware.com](http://www.parleyshardware.com))

- N95 – This is the minimum rating on a mask that you want to get – they filter particulates & droplets from others who sneeze or cough. Don't get unrated comfort dust masks. Most comfortable with exhale valve & won't fog glasses.
- N100 gives better protection. Best to get with exhale valve.
- Painters' masks and P95 masks have carbon which absorbs odors for those who are sensitive to smells. Exhale valves are a good feature.
- "Triosyn" masks provide the best bacteria and virus protection.

### **Controlling Vermin and Pests:**

- Mice and rats spread disease. Have traps and bait. Cats control by killing them.
- Fossil Shell Flour (DE -- diatomaceous earth) food grade – put around cabinets, etc. for insect to get to. Cleans out parasites in animals. (*Get at [www.parleyshardware.com](http://www.parleyshardware.com)*)
- Use metal file cabinets, mice cannot get in.

### **Keeping Things Sanitary:**

- Have lots of empty spray bottles.
- Portable wash pails and pans – galvanized or stainless are better than plastic.
- Paper plates, cups, and utensils – disposable for short-term use. Saves water.
- Stainless steel plates, bowls, cups and utensils are best for long-term use.
- Keep plastic grocery sacks. They will come in handy for carrying things. Cut a hole in corner of a cardboard box and just stuff them in side to store.

### **Cleaners and Sanitizers:**

- Calcium hypochlorite (dry bleach) is better than liquid bleach (sodium hypochlorite) which has a 1 year shelf life. Calcium hypochlorite will store for years (*Available [www.parleyshardware.com](http://www.parleyshardware.com)*)
- "Steramine" – 1 tablet to one gallon of water (*Available [www.parleyshardware.com](http://www.parleyshardware.com)*)
- Safety tip: Do not store chlorine and ammonia products close together. Never mix chlorine bleach and ammonia as this will produce very deadly chlorine gas.
- GSE (grapefruit seed extract) or "citricidal". 10-20 drops in 1 quart of water. You can wash countertops, vegetables, meats, etc. with it. (*Available [www.parleyshardware.com](http://www.parleyshardware.com)*)
- Iodine tincture – available at drugstores.
- Hydrogen peroxide – Very useful. Store in cool dark place.
- White vinegar, ammonia, baking soda – simple, basic, not toxic and all very useful.

### **Disposal of Trash and Garbage:**

- Options:
  - bury, compost, wash and reuse containers
- Save paper to burn in winter
- Disposable Diapers – don't wrap into a ball – you want contents to make contact with the soil to speed decomposition.

### **References:**

*Sanitation Class Notes, Jim Phillips, Highland, Utah, 8/08/08.*

If you have questions on this or other topics you can direct them to [askjim@preparemyfamily.com](mailto:askjim@preparemyfamily.com)

## Washing Clothes without Electricity

(Parts from Jim Phillips)

*Fill up empty detergent bottles with water and store for future washing.  
A preferred laundry detergent is Amway's SA8-no fillers and low suds.*

- Option #1: Use your hands. Cheapest option but most difficult.
  - Fill a bucket with water and add laundry detergent
  - Put the clothes you are washing into the bucket and let soak for at least half a day, no longer than a day.
  - Scrub the clothes against each other, especially at the dirty parts or use a scrub board.
  - Add extra detergent to a dirtier spot and scrub more to get clean.
  - Drawbacks:
    - It's hard on your hands, considering washing dishes by hand will also be done
    - Hand washing is not as effective as using mechanical devices
    - It is best done by older youth and adults who are stronger
    - You get water all over the place, if you are not careful, but can wash in the bathtub.
    - It's a slow process
  
- Option #2: 5-gallon bucket with plunger
  - Drill a hole into the lid of the bucket that the handle of the plunger can stick through. Use a "Breathing Mobile Washer" plunger to agitate clothes. (*Available at [www.parleyshardware.com](http://www.parleyshardware.com)*)
  
- Option #3: *Jim Phillip's Wash Day System* for under \$300 (if you shop around a little)
  - **The Plunger Washer \$15 (must have):** You can use a bathroom plunger in a pinch, but the Mobile Washer or the Rapid Washer are a much better choice. They both are designed to do laundry and perform much better than a regular drain or toilet plunger. Recently I was introduced to "The Breathing Mobile Washer" which is a newer design than the original "Rapid Washer". The Rapid Washer" has been around for more than 100 years. "The Breathing Mobile Washer" has two big advantages: 1) it's made from plastic, so it won't rust and, 2) it has a standard screw-in mop handle design. This holds the handle more securely and makes it easy to add a longer mop handle when needed (see below).
  - **Six Gallon Bucket \$6 (must have):** The more common 5-gallon bucket will work, but the larger 6-gallon bucket is more suited for laundry. You really must have a lid or you get water all over the place when you are washing vigorously. Just cut a hole in the middle of the lid just large enough to run the handle through, this contains the splashes and guides the plunger. (I highly recommend you get a Gamma Lid.)
  - **Gamma Lid \$10 (must have):** This is for your 6-gallon bucket. The regular snap-on lids that come with the buckets will do the job, but they are a royal pain to pound on and peel off, and if you don't have a lid securely sealed in place, water will get all over.

If you have not seen the Gamma Lid before, it is slick. It snaps on in place of the one that comes with the bucket, but instead of having to pry it off, the whole center of the lid very easily screws right out. This is not only easier for anyone to use, but it make is possible for children and older folks to open and close the lid very easily. Anyone can do the laundry. You will have to cut a hole in the center of the lid just large enough for the handle to pass through. You will want to get several of the Gamma Lids to use on some of your other storage buckets. They are very handy and make it easy to get into supplies of foods and other things you store in the buckets.

- **Tumbler washer \$50 (very important):** This is an almost must have item. This is a countertop unit that lets you do small loads very easily. It is especially useful to keep clothing items worn directly against the skin clean (socks, undergarments, pajamas, etc). For small items and small loads it is much quicker and easier to use than the bucket. Children can easily use it to help out with the chores. If you must save some money, you can use the bucket system above to do the job, but you'll really enjoy using one of these.
- **30-Gallon Plastic Open Head Drum with Clamping Lid - free to \$50 (must have):** On occasion you will need to wash some big loads (several pairs of jeans and shirts, or blankets). Loads like that just don't fit in the tumbling washer or the bucket. You will have to resort to either the old fashion wash tub or the bath tub, both of which are more difficult to use. This is just an over-grown version of the bucket/lid/plunger system above, here's what you do. Cut a hole in the lid for the handle to pass through, screw a longer mop handle into the "The Breathing Mobile Washer," put the lid on, clamp it down and go to it. Once again this is something that even a smaller person can do. One other thing you will want to do is to add a valve at the bottom so you can drain off the water instead of having to dip it out, or siphon it out, or tip the drum over (heavy). Use one that has male hose threads on it so you can connect a garden hose and run the water where it can do some good (this is called gray water and is great for plants).
- **Extended handle for the plunger washer-free to \$12 (must have):** Without a longer handle you cannot use "The Breathing Mobile Washer" in the 30-gallon drum. I prefer the ones that have the metal or plastic threads on the end which last longer than the wooden threads. If you have the "Rapid Washer" you will need to come up with a handle for it also, which is not as easy because it uses a tapered fit handle rather than a threaded one. With the non-threaded tapered handle of the "Rapid Washer" it is very important that you pin or screw the head to the handle securely. If the handle comes off in the 30-gallon drum you'll have to go diving to retrieve it.
- **Hand wringer \$110 (very important but not critical):** Not something you must have, but it will really help to get more wash water out of the clothes so you use less rinse water and get more rinse water out so your clothes will dry faster. A roller wringer is easier on the clothes and your hands than hand wringing. A roller wringer will also expel more water than hand wringing. With more water expelled the laundry basket you carry to the clothes line will be much lighter, thus easier for small people to do.
- **Wringer stand \$80 (optional):** The wringer can be clamped to a number of things. If you make an adapter for your 30-gallon drum that is best. You can clam it onto something else you have at hand. If you don't think you have a solution for clamping it, then the easiest thing to do is get a stand to hold it.

- **Clothes line \$20-70 (must have):** Of course you can use rope or even the 550 parachute cord for small clothes lines. The best clothes lines are wire or vinyl coated cable. All non-metal clothes lines seriously sag. If you are trying to set up a large clothes line to dry clothes for a family, then rope or cord will not work very well. Also the metal lines will last indefinitely, whereas non-metallic lines break down in the sun and weather after a few months or few years depending, on what they are made of. You can make your own clothes line by stringing the wire between posts, trees, building, etc., or you can buy a ready made one.

**References:**

*Wash Day Solutions without Electricity* by Jim Phillips, [jimsway.com](http://jimsway.com)