

PortaWell Newsletter

April 2022

Tips and Tricks for Emergency Water Filtration

One PortaWell Customer asked the question:

I bought the main unit. What accessories would you suggest I buy next? I'd like to feel confident that I have all I need for long term usage but needing to budget as I go.

In this issue:

PortaWell Accessories—What do I need?

The answer to the question is: it depends on three things,

1. What is your intended use.
2. What type of emergency or scenario are you preparing for; and
3. What water source do you have access to in emergency.

In addition to PortaWell, the basic accessories I recommend for my family members to include are these 6 items:

- 6 ea. spare sediment filters
- 4 ea. spare carbon filters
- 1 ea. spare ceramic filter
- 1 ea. 12-volt battery (minimum 8-amp hr.)
- 1 ea. Solar panel + charge controller including compatible connecting cords

These accessories are adequate for most recreational usage (i.e., hunting, camping) and short-term emergencies where normal utilities would likely be restored within a few days or weeks. This also assumes that the available water source is mostly clear, free of significant

contaminants, odor, and color. An example of this is a clear running stream or mountain lake, swimming pool water (not salt), collected rainwater, or tap water that has a boil order issued.

If the available water source is stagnant, or cloudy with significant particulate, or has potential for chemical and fecal contamination (example is a pond, slow running stream or river in urban setting), I would add the following items:

- 2 ea. AquaCera CeraMetrix ceramic filters (for reduction of both biologic and broader range of chemical contaminants)
- 2 ea. NanoCeram PAC pleated filter (absolute filtration down to .2 microns for virus reduction)
- 1 ea. Chlorine kit (for post disinfection of water after filtration (if deemed necessary) and sanitation of components after use.)

If you are wanting a more complete solution where the emergency lasts for an indeterminate time (SHTF scenario) and could

be without grid power for weeks or months, I would add the following items:

- 1 ea. Maintenance Kit (spare O-rings, filter wrench and silicon grease)
- 1 ea. Spare pump
- Additional spare filters
- 12-volt LiPo4 battery (minimum 20-amp hr.)—we don't sell this item but can be purchased online
- Spare buckets and clean water storage containers

As to the number of spare filters for this last scenario, the key to remember is the service life of any filter depends on the condition of the water source being filtered. Filters by their nature are consumable. They remove contaminants from water by retaining the particulates, microbes, or chemicals within the filter matrix. When the contaminate holding capacity of the filter is reached, either the filter becomes plugged and will slow the water flow; or in the case of chemicals, the adsorption capacity is reached, and the filter will no longer remove the chemical contaminant.

Ceramic filters have an advantage in that they are cleanable and thereby reusable.

A disadvantage of ceramic filters is they have a relatively small dirt holding capacity before they will plug. For this reason, it is important to remove as much cloudiness (particulate) from the water as possible. Usually this can be done by allowing the water to settle for several hours and then prefilter with a 1-micron sediment filter in the first stage ahead of the ceramic filter. Ceramic filters are also quite fragile and need to be handled carefully.

Filter life can be extended by:

1. Selecting your water source with the least amount of potential contaminants

2. Pretreating water to remove larger contaminants (especially sediment and algae) before filtering through PortaWell.

Filter manufacturers are a bit ambiguous on rated filter capacity. The usual figure quoted is how many months to change the filter. And even this assumes you are filtering tap water. I recommend doing your own testing to determine the correct number of spare filters for a long-term SHTF scenario.

As always, PortaWell is designed to use non-proprietary filters, components, and accessories and each of these items are available from other commercial sources.