

Smart, Easy Ways To Purify And Store Clean Water



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How To Purify Water For Survival

Through the years, I've heard many stories, horrible stories, about campers stranded out in the wild for days and days on end. Some of them never made it back to civilization, but those who survived and got back to tell the tale managed to find themselves a steady supply of the one thing that we can't live without: clean water.

Unlike food, we can live without water for just a few days. If we're in an extremely hot environment; that days can be cut to as little as just a few hours.

The problem with surviving for extended periods of time in the wilderness is that there's no way that you can carry enough water, equipment and food with you to last for weeks. Hence, if you're a prepper who knows his priorities, you already know that you need to acquire the survival skills (and tools) to find what you need in the wild, before you boldly go where no camper has gone before.

Let's face it; it's much easier to find and purify available water on the spot than it is to carry the weight that an adequate supply of potable water in the wilderness would mean. In fact, I'll have to say that that's pretty much impossible, as I told you before.

To start with, an adult requires about a gallon of drinking water every 36 hours; even more if they are performing considerable physical effort or in that hot environment. Dehydration is a silent killer; one that comes without warning, depleting you of your strength in no time; it also impairs judgment; so you should avoid getting dehydrated at all costs.

Now, let's take a look at the main ways of procuring and purifying water in the wild in order to mitigate the risk of contamination with bacteria, or other parasites:

Boiling

Boiling is the easiest and oldest way to purify water. You need a fireproof container and the means to make fire.

Like I said, you should never go out, risking your life, without knowing the basics of survival, i.e. making fire like the Cro-Magnon man did 50,000 years ago.

It's shameful to live in the 21'st century and not know the basics of outdoors living, don't you think? Prior to boiling the water, filter out the larger particles with a towel or a t-shirt.

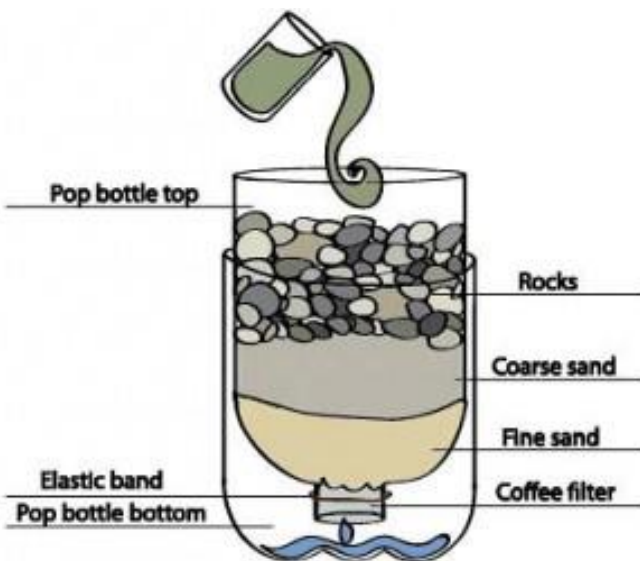


Then pour your clean water into a pot with a cover and boil for a minimum of 3 minutes. Boil for a longer period of time if possible. You don't want to take chances with your water and fall sick. Make sure your pot or kettle used in boiling the water has lids so that you don't lose any more

than necessary to evaporation. The aim is to conserve heat and bring the water to boil as soon as possible.

As with any other thing, boiling water should be done with caution during emergency situations. Care should be taken so as to prevent injury since getting medical attention during this period can be difficult. After boiling, allow the water to cool before drinking. If there is scarcity of fuel after SHFT, then consider using the other methods mentioned below.

Filtration



It will not be surprising if your source of water is cloudy and dirty looking from contamination from refuse disposal. The first step lies in pre-filtering your water using water filters.

Most preppers buy one of the **high-tech filtration/purification pumps**. This type of gear is available at any camping or outdoors supply shop. There are many

types of pumps with various kinds of filters, which will purify water instantly. They work by squeezing the water through a ceramic or charcoal filter, while treating it with chemical substances.

It's much easier to carry a water filter around with you than burden yourself with 5 gallons of water, right? There are also water filtering straws and water bottles with built in filters. These use suction power for filtering the water and have the obvious advantage of being easier to carry around.

Have at least two different water filters ready for this purpose. If your water is dirty looking, it is very likely that one filter will not do a good job of filtration. The second filter should be used to clean the water a second time.

You can improvise your own DIY water filter as well, making a bio-filter out of things that you find in the wild. Start with a cone, made out of a strip of bark. Fill it with consecutive layers of charcoal, sand, grass and gravel, with the charcoal being at the bottom. You can get charcoal fairly easy from your fire.

While it won't work as good as activated charcoal, it will provide some filtering, especially if you break it into small pieces. Allow the water to percolate through the layers, coming out at least somewhat purified at the end. Keep in mind that the more filtering that the water has, the better it will come out.

Or insert a fine mesh pantyhose inside a clean white athletic sock, then slowly pour your unclean water into the opening so that water slowly drains from the socks into your clean container. Several layers of clean clothing can be used instead of socks and panty stocking. Make sure the water is repositioned periodically so that water is dripping down through a clean surface. Repeat the process until the water looks reasonably clean.

Water Drops or Tablets

You can buy and carry military style water purification drops or tablets. This is one of the easiest to use water purification methods. The downside of the method is that the water treated that way doesn't taste so great.

The main ingredient in these tablets is iodine, but there are also chlorine/potassium permanganate pills. The military only recommends using these methods when other methods are not available. Considering the flavor, I have to agree with them.

DIY Water Still

Another DIY method is to **build a solar still into the ground**. This is a great "survivalist" method, because you only need minimal gear in order to procure water via evaporation. All you have to have is a plastic sheet, such as a garbage bag, a pan or container to put in the bottom and a piece of rubber tubing.

To make it, all you need to do is to dig an inverted cone shaped hole into the ground. Then you put a container in the bottom, with the end of the rubber hose anchored in it. Lay out the hose so that the other end is outside the hole and anchor it as well. Cut off leaves and other greenery and put them in the hole as well, taking care to make sure that they aren't covering the pan.

The hole must be covered with a plastic sheet, making sure that no moisture can escape. After that, you must put a small rock on the plastic cover, in the center, making the plastic dip over the pan or container. As the water evaporates from the ground and the plants you put in the hole, it will condensate on the plastic sheet (that cools easily) and drip down inside the container.

Cool, huh? The water can be sucked out of the pan through the tubing, so that you don't have to open the still up. You must take into account that this is not the fastest method to get yourself drinking water, but it works like a charm, anytime anywhere. For better/faster results, you can dig a few holes instead of one, given that you have enough plastic sheet available.

Solar Water Disinfection

This is one of the simplest methods of natural water purification that has been certified safe. All you need are clear plastic bottles and sunlight. Fill your plastic bottles with water and place them in the sunlight for a period of 6 hours. The sun's ultraviolet rays will do the trick by killing the parasites in the water. This method of water purification will work even if temperatures are low in your location as long as the water reaches 30 degrees Celsius for a minimum of 5 hours.

Natural Water Purification Agents to Use for Survival

Citrus Juice

Drops of citrus juice have been used for water purification for decades. Sources of citrus juice for this purpose include lemon and lime. A squeeze of citrus juice contains many antibacterial qualities that are known to serve as disinfectants. This is especially useful in emergency situations when treated water cannot be obtained easily. Drops of citrus juice are used in

commercial water treatment products where they are known to help in the process of water purification.

Charcoal

Charcoal is another good method of purifying water naturally. Charcoal exists in different forms and not all forms are good to use for water purification purposes.

Compressed charcoal, also known as carbon block, is the best type of charcoal filter to use. This type of charcoal can remove chemicals and lead from water. It is best used with sediment prefilter. Powered charcoal can also be used for this purpose but it can be a messy process if you are not careful. Granular charcoal is not a very good option because water can flow around the granules without being filtered.

Banana Peels

Banana peels are full of acids and other purifying molecules that aren't harmful to people. After all, we eat the bananas that are inside, right? One of the biggest sources of water contamination is heavy metals.

Mercury, lead, copper, iron, and other naturally occurring metals find their way into our water sources by both natural and man-made means such as agricultural and industrial waste and runoff.



They are lethal to us and the unfortunate part is that they build up in our bodies slowly over time. Lead and mercury in particular build up and can damage the nervous system and, specifically, your brain. Not good.

Typically, engineers use aluminum oxide, silica, cellulose or other means to extract heavy metals but these are expensive and not readily available to John Q. Public. They also have side effects of their own. Charcoal filters out impurities but basically it can only get bigger pieces, so it's not even that effective.

Banana peels, which are now being studied extensively for use as a water filter, contain atoms of sulfur and nitrogen, along with carboxylic acid and other compounds. Now, we're going to get a little scientific but I promise to keep it brief. Think magnets, sort of.

The carboxylic acid ions become negatively charged and the heavy metals in water tend to be positively charged. See where I'm going here? The metals dissolved (or floating) in the water are attracted to the acids, which are bound to the banana peels. They stick to the peels and can be removed when you take the peels out of the water. You may not get them all, but you will get a significant amount of them.

Supplies Needed to Make Banana Peel Water Filters

This doesn't have to be complicated. You need banana peels. Oh, and water. Typically, for a scientific process I would also recommend a book or a board game because they take so long.

However, in this instance, results are seen immediately, and if you're willing to wait 10 minutes, you'll see about a 60% reduction in heavy metals. If you'd like to measure your progress, you can always get some heavy metals and some water test strips, available online.

How to Filter Your Water with Banana Peels

There are a couple of different methods that you can use, but it seems that the peels work better when they've been dried a bit. Here are your options after drying the peels for a few hours. Cut the peels into small chunks, then place the peels in the food processor and make a dust or meal out of them

Now, on to the actual process. You may place the peels or powder in a coffee filter or cheesecloth and pour the water through them. You also have to option of tossing the peels directly into the water letting it sit. Using the sieve method extracts a significant amount of the

metals but letting the chunks or powder sit in the water for about 10 minutes extracts even more.

Studies show that you've achieved maximum results at ten minutes so there really isn't any reason to let it sit any longer. After they've sat, simply use a clean fish net (if using powder) or a slotted spoon (if using chunks) to remove the peels. You can also just pour the water through a strainer or coffee filter to remove the peels or powder if you're doing small quantities.

A surprising point that was discovered during research: the banana peels can be used as water filters up to 8 times and still be effective, so you're getting some serious bang for your buck there.

The conclusion here is that banana peels can be used to filter water for survival. They are more effective than most other methods for removing heavy metals from water. This doesn't mean, however, that they're useful for killing bacteria, so you still need to use your water purification tabs.

We recommend using both methods if you're drinking from a water source that you're not sure about. Banana peels get the metals but not the disease; purification tabs get the disease but not the metals.

How to Purify Water with Iodine

Without a doubt, water should be your number one priority after personal safety in a survival situation. The problem, though, is that water sources may be contaminated. In order to ensure that your water is safe to drink, you'll need to filter and purify it.

There are a few different ways to do this, but today we're going to tell you how to purify your water with iodine for survival.

First and foremost, you need to know that, even under ideal circumstances, you



can only survive about 3 days without water. The time may be shorter or just a bit longer depending upon your physical condition.

If you feel thirsty, you're already in the beginning stages of dehydration. Don't wait any longer to start looking for a water source if you haven't already stockpiled your own or located a safe source. That should be the first thing that you do as soon as you know that it's safe to venture out.

Whatever you do, DO NOT succumb to your thirst and drink from any water source that you're not positive is safe prior to purifying it; pathogens in water can quite literally kill you.

How Does Iodine Purify Water?

Iodine kills the bacteria in water by disrupting the ionic balance within the pathogenic cells. It replaces the chemicals necessary for the bacteria or virus to thrive with iodide ions.

You can buy iodine in tablets, crystals, or tincture of iodine. The tincture is the same exact orangish red stuff that your mom probably put on your cuts and scrapes when you were a kid. Be careful not to confuse iodine with betadine, though. The two are different and only iodine is cleared as a safe, effective way to purify water.

If you remember correctly, iodine smelled funny and it dyed your skin orange. It does the same thing to your water and can be toxic if you use too much, just like bleach can. It can be especially harmful to kids and pregnant women and we don't recommend that you use iodine as your primary water purification method in a survival situation.

However, it will do in a pinch and is most assuredly effective.

How Much Iodine Does It Take to Purify Water?

If you're using tincture of iodine, use about **2 drops per quart of clear water and 10 drops for cloudy water**. Let it stand for at least 30 minutes in order for the iodine to kill the nasties. Be warned that using tincture of iodine is going to change both the flavor and the color of your water.

If you're using crystals, follow the directions on the bottle. One small bottle of iodine crystals can treat up to 2000 quarts. But if you're in the US, this product is tough to come by because it was nixed by the DEA. Apparently it was being used illicitly to make crystal meth so they banned it even though it was a great, portable, inexpensive way to kill pathogens without drastically changing the flavor of the water.

If you're using tablets, follow the directions on the packaging, though the most popular ones typically require **2 tablets per quart of water**. Again, you'll need to let the water sit for at least 30 minutes so that the iodine can effectively kill the pathogens in the water.

A Few Important Notes about Using Iodine to Purify Water

1. As we've already stated, **iodine can be toxic if you use more than directed**. There may also be health consequences for long-term use. On the other hand, iodine in small amounts is required by your body in order to function properly, which is why the government mandated that salt be iodized in the 1920's. People were severely iodine-deficient and were experiencing some pretty severe health issues such as goiters and other thyroid issues. It's like many other nutrients – you can't live without it, but it will kill you in large doses. Just follow the directions.
2. **Filtering your water to remove the larger pieces of debris prior to adding the iodine is ideal**. Pathogens tend to cling to large particles so removing them makes the iodine more effective, faster. You don't want to drink chunks of stuff anyway.
3. **Iodine only kills living pathogens**. If water is contaminated with poisons such as fertilizers or pesticides, heavy metals, certain parasites, radiation, or other forms of toxins, iodine isn't going to help.
4. **If you're allergic to iodine, don't use this method to purify your water**. Of course this is a no-brainer, but still. Just don't.

Iodine is effective against disease-causing pathogens, is affordable, and is extremely portable. Since it's simple to use, it makes a great emergency water purifier but we still recommend using a combination of filtration and purification just to make the cleanest drinking water available.

Chlorine tabs or liquid are also effective methods and actually work better than iodine, but if you don't have those options, iodine will most certainly work in a pinch.



Collecting And Storing Water For Survival

Rainwater is an excellent source of free water, or so you'd think, right? Apparently not, though. For example, some Western states including Utah, Washington and Colorado outlawed home owners from collecting rain water on their own properties.

According to the good' ol government, the water that falls from the skies belongs to someone else and you're essentially stealing if you collect it. So check your laws before moving forward.

Well, that being said, collecting rain water can be very important for your survival, if SHTF and your regular water supply runs dry. In a societal collapse scenario, don't expect for the regular chains of supply, i.e. utilities like power, gas or water to work efficiently, if at all. Therefore, survival will be up to you.

A clean and reliable source of water is absolutely critical when it comes to survival. You can last for weeks without food, but without water, you'll kick the bucket in a matter of days (three-four days tops) and you'll be non-functional within just a couple of days.

Now you can see how rainwater collection can become a survival issue. In normal times, the average American uses almost 100 gallons of water per day (according to the US Environmental Protection Agency).

In reality, though, you only need just about a gallon to survive if you're just going to drink it. Plan for another 1-3 gallons for hygiene purposes. Still, that's a lot of water to save in buckets or gallons if you're stockpiling for a month or even a week.

Collecting and storing rainwater may sound weird for all of us that are used with wasting water on a daily basis, since water seems to be an abundant resource at the present time. However, if SHTF a rainwater collecting system will be an excellent (and maybe the only) alternative for providing you and your family with good quality water for drinking, cooking, and hygiene.

You can use rain water for various purposes: besides drinking, rainwater can be used for washing your clothes, feeding your livestock and even to flush your toilet.

Harvesting Rainwater

Now, if you choose a dedicated rainwater collecting system, which is very easy and straight forward to build, you can DIY from readily available materials.

Its advantages, besides providing you with a good quality water source, are its simplicity of construction, the ease of maintenance and its convenience.



Though it may sound simple, harvesting rain water is not as simple as putting a bucket under your gutters; things are actually a bit more complicated than that. To begin with, contrary to popular belief, rain water is not as pure as an angel's tears.

The air is filled with pollutants nowadays, not to mention the filth that lies on your roof (you'll harvest the rainwater from your roof, generally speaking) : dead bugs, birds feces, dust, arsenic, lead, and a variety of other not-so-delicious toxins accumulate up there and will run right into your bucket along with the rainwater.

Filter It First!

Depending on the type of the roof you have, you must filter the rain water thoroughly. Only if you have a steel/glazed tile roof, you can collect rain water without filtering it. A roof made of asphalt shingles, concrete tiles or galvanized metals will require you to filter the water before storing it in order to remove debris. We recommend filtering it regardless of what type of roof you have.

Aside from the rainwater collecting system, you should also consider investing in a high quality water filtration system. Or you could use natural water purification methods as described in one of our previous articles.

If you already decided to collect rain water directly from the roof, remember to let the rain to wash your roof for 10 minutes before starting to collect it; that way you will prevent larger debris and at least a layer of contaminants from getting into your water supply.

You should use a screen to capture the larger particles from the water, like leaves and bugs. In the next step, if necessary, you will use a dedicated water filtration system before storing it.

The rainwater should be stored for later use in a 50+ gallon barrel. You don't need anything fancy: just a regular barrel painted black to minimize algae growth and to block sunlight. In a SHTF situation, it would be a good idea to hide your rain barrel from your neighbors or passersby using trees or plants. Hiding your stockpile from strangers is another article you should check out too.

How to Choose the Right Rainwater Tank

People can go on for weeks without food, but not without water. During hot conditions like drought, dehydration can set within hours, and hot conditions may pose certain hazards to health. Heat stroke, heat cramps, heat rashes, etc. are some heat-related illnesses.

Anyone who has physically exceeded under the heat without replenishing can actually die in a period of several hours. The same is true with anyone who is locked inside a hot car for long hours. We need water to live, period. But when shit hits the fan, no one is on the easy street.

Rainwater is evidently a great water resource during climatic disturbances and on many regular days. Many studies have proven such even centuries back.

Although some countries don't recognize rainwater as a sustainable alternative to water streaming out of the mains water system, it however offers a large scale off the grid remedy especially in times when water is insufficient to meet everyone's needs, in all aspects around the world.

How to Use Rainwater?

The decision of using rainwater is a matter of choice which may be attributed to the initial outlay and necessity. Installing rainwater tanks may or may not require large one off installation expenditures as it would entirely depend on water practices of each household and the location of the dwelling. These two factors generally influence the design and type of maintenance required for the tanks.

For those whose budget is in consideration, going off the grid with rainwater at a minimum cost is also possible with other tank substitute, i.e. food storage barrel and big garbage bins. Think out of the box, there could be something else that could possibly be customised into a rainwater tank or can be purchased at a lower price from bulk stores nearby.

Besides, sustainable alleviation during emergencies should be cost effective at the same time causing minimal adverse impact in the environment.

If your requirements would necessitate you to pull extra amount out of your pocket as you would generally be using the rainwater as a main source of water at home, consulting professionals for variations and proper installation would be the best thing to do. You should also check the government guidelines for specific requirements and possible rebates and subsidy.

Types of Rainwater Tanks

Underground Water Tank

This is ideal for those who have limited space and want to keep their barrel out of sight.

This type of water tank hence expected to sit underground should be placed in a light traffic areas where heavy loads and vehicles are not regularly driven.

This is also perfect for those who have large storage requirements i.e. school, agricultural and manufacturing business, etc.

To avoid structure failure, maximum groundwater level, structural integrity of the ground, drainage capability of the soil as well as the types of load which may occur (if installed underneath a drive way or regularly driven area) must be checked prior to installation.

Since installing these types of tanks generally involves excavation, the price is relatively high compared to the aboveground tanks. In any circumstances these tanks must be well ballasted otherwise, it would pop out of the ground when empty.



Less commonly, rainwater that is collected in underground tanks can be subject to microorganisms associated with animal and human faeces which may contaminate the water if not fully enclosed. That is why most rainwater from underground tanks is not recommended for personal hygiene and drinking where sufficient main water supply is available, unless properly treated and maintained.

Aboveground Water Tank

When it comes to installation, this does not require much of work as this can be erected anywhere above ground. This should be sufficiently elevated to provide adequate pressure to appliances.

Unlike underground water tank, this type of tank is more susceptible to microbial contaminants i.e. bacteria, protozoa, etc. which are acquired from feces of birds, reptiles and amphibians that have free access to roof or tanks. Rainwater may also accumulate contaminants from dust washed off the roof surface.



Other contaminants may also generate from leaf litter, lichen, moss, roofing materials. As such, this type of tank should be filtered and treated properly to eliminate the presence of bacterial contaminants. Gutter guards or mesh filters are recommended to be installed.

Readiness Checklist

1. **Purpose** – You have to decide what you will use the rainwater for. Would you be using it for food preparation, flushing the toilet and drinking? For rainwater used as the main source of water, additional mandatory equipment is required like taps, filtration and

pumping system. For rainwater tank to be used for outdoor purposes like gardening and washing vehicles, smaller tanks of 1,000 L with taps are just fine. In addition to determining the purpose of the tank, you also need to consider how it should be connected to the storm water pipes and downpipes to identify possible extra cost.

2. **Users** – Water consumption will largely depend on the number of individuals using rainwater for different purpose. So, aside from considering the reason of the installation, identifying the number of people within the household will also help determine the capacity of the tank to be purchased.
3. **Area** – Different areas has different regulations which are based upon the location of the dwelling, accessibility to centralised water system and precipitation frequency. Since rainfall pattern varies year on year everywhere, this should be considered before investing in rainwater system. The length of stay in the area, if rented should also be considered as moving the tank from one place to another can be a hassle.
4. **Space** – The design of the house should be factored in before purchasing a tank. Small, slim line lightweight polyethylene and underground tanks are ideal for those who have limited space at home and wanted to keep the barrel hidden from view.
5. **Roof catchment suitability** – Roofing materials should be checked prior to installation. Gutters should have sufficient and continuous water flow to downpipes to prevent pooling of water that could increase accumulation of various contaminants. Paints and coatings may not be suitable for roofs to collect rainfall too due to possible hazardous content. Asbestos fibers on the other hand are no longer used in new houses as it has proved to cause danger to health when inhaled in sufficient quantities. Maximizing the roof catchment means maximized water savings.
6. **Approval** – Before purchasing a rainwater tank, the local community and regulatory authorities should be contacted to determine specific requirements like planning, installation permit, operation approval and other guidelines needed to be accomplished prior to and after the installation. Depending on local conditions, policies for using rainwater may be emphasized within the food security or the environmental protection policy context. Standalone tanks that are not connected to downpipes do not generally

need approval, except if you are under the roof of a government that completely restricts the use of rain barrels.

7. **Cost** – Tanks can cost as little as few hundreds to thousands of dollars, depending on the size, design, color and material of the tank. Extra cost may also be incurred during the installation for additional materials (level indicator, first flush device, etc.), delivery and setup charges.
8. **Design** – Rainwater tanks comes in a wide variety of designs (shapes, sizes, materials and color). Slimline type has become the most preferred due to its compact and sleek style. As internal and external hydrostatic pressure of the tank affects the water's flow and volume the size of the tank should be highly regarded. The wider the tank the better. Standalone lightweight empty barrels that are not connected to downpipes can be easily blown by the wind during gusty season, placing a clean rock in the bottom of the tank may prevent this.
9. **Location** – Rainwater tank can be installed underground or aboveground. In designing rainwater system, the location should be first investigated especially if excavation is required as structural integrity and materials are regulated through building codes and standards in some areas of jurisdiction. When installing aboveground rain barrel, the ground should be level and full packed to provide a solid foundation.
10. **Installation and Maintenance** – Ground rainwater service pipes must be clearly labelled "rainwater" continuously along their length. Tank, covers and plumbing pipes and fittings should be light proof to reduce daylight penetration and potential growth of algae. When connecting numerous barrels it is vital to make sure the connected pipe is large enough to provide smooth and quick flow between the barrels.

In any circumstances, the choice of using rainwater is at the risk and responsibility of the owner therefore it should be in compliance with the regulations of the responsible authorities.

Irrespective of how it is being utilized proper maintenance is recommended to keep the quality of the water and efficiency of the tanks.

Cleaning and Maintenance of Your Water Tanks

Cleaning and maintenance of the rainwater tanks can be achieved by these few tips.

1. Check the sides and the bottom of the tank for accumulated sludge
2. Keeping roof catchments free from animal and insect feces
3. Regular cleaning of gutter and tank inlet for any build ups
4. Cut back trees and branches that extends beyond the roof
5. Test the water periodically to determine appropriate and adequate treatment
6. If pumping system is attached, inspect that it is in good functional condition
7. Replace roofing and other material as needed
8. If adequate access to the tank is impossible, contact the tank cleaning company
9. Regularly check and clean the tank's inlet and overflow screens.

Smart Tips for Water Storage during Winter

While some people are busy claiming that the planet is heating up, many of us are facing record cold winters. If you have never dealt with frozen pipes and other difficulties in a routine setting, it will be even harder for you to maintain a supply of running water in winter months during a crisis.

Important Tools and Equipment to Have on Hand

Fortunately, there are many reliable methods available for storing and preparing your water pumps and pipes for cold weather regardless of where you live and the situation at hand. You just need a little preparation, and also some tools at hand.

- Propane torch - can be used to defrost copper and metallic pipes. It can also be used to defrost pump switches on older models that do not have plastic or other flammable parts.
- Hair dryer - can be used to melt ice in pump switches, as well as in plastic, metal, and other pipes.
- Incandescent lamps or heat lamps to generate steady heat without fire

You also need some freezing preventative equipment and materials:

- Fiberglass insulation (without paper backing) - use insulation and a wooden box around the pump and pipes leading into the house.
- Heat tapes - wrap these tapes around pipes, especially near the pump and any area where the pipe may be exposed to freezing temperatures.

Prepare also some alternatives to electric water pumps:

- Cast Iron Hand Pumps - These “old fashioned” pumps can retrieve water up to 300 feet below the surface. They can be installed along with electric pumps and used when needed. Never touch a cast iron pump handle in cold weather with bare hands, as it can rip the skin and flesh from your hands.
- Ram Pumps - This is another “old fashioned” pump design that requires no electricity. As long as you build it from metal parts, it will be easier to manage freeze ups. Just be sure to have some non-frozen water on hand for priming as needed.

Things to Beware of When Preparing Pipes

It is very important to keep in mind that water is one of the few substances that expands when converted from the liquid to solid state (ice). Even though water may move freely through pipes without damage, ice will break them apart because of the expansion.

Therefore, when preparing pipes for winter, it is always best to err on the side of safety and insulate them as much as possible.

You can use insulation around the pipes, and also heat tape for added warmth. Depending on the area, you may also need to move pipes into the home where they will not be exposed to freezing temperatures under the house. Needless to say, you will also need to take special care to insulate pipes coming out of the pump.

Keep Water Running on Freezing Days

In many cases, if you can manage to keep water running through pipes, it will not freeze up. On cold nights, let warm water drip through faucets so that the lines remain ice free.

You may also want to hook up a smaller water storage tank, and switch over to that so the pump goes on more often. That said, if temperatures fall quickly, you may wind up with a frozen system if the pump freezes up with water still in the lines.

If you need to thaw pipes out, start off by turning on at least one water faucet. This will help draw water through ice patches as soon as they begin to melt.

Depending on the pipe material and surrounding materials, you can use either a propane torch or a hair dryer. As long as there is nothing flammable in the area, the torch will work faster and better.

Take Care of Your Water Pump

As with water pipes, it is very important to insulate pumps and keep them in temperatures above freezing. You can use fiberglass insulation around the pump, and also heating tape to provide extra warmth. Unfortunately, some areas of the pump, such as the switch are difficult to insulate. You can try keeping an incandescent lamp shining on it, or provide some other heat source to prevent freezing.

Control Winter Water Usage

The best way to reduce or control winter water usage is to make sure that you are saving as much water as possible throughout the year. This includes:

- Always stop up leaks by repairing or replacing valves and pipes as quickly as possible.
- Use governors and other water saving faucets.
- Place a half gallon bottle of water in the toilet to reduce the amount of water used for each flush.
- Wash dishes by hand instead of using the dish washer.

Ways to Store Water in the Winter

No matter how hard you try, there are bound to be times when the pump or pipes will freeze.

Rather than wind up with no water at all, you should always keep a few gallons of water on hand in a warm room.

If you do not have plastic jugs, then simply fill up the coffee pot, or any other pots that you may have on hand. You can also fill up the bath tub for washing water and a few gallon pails for the toilet.

Oddly enough, you may also want to keep some blocks of ice stored in sawdust. Even though the ice will need to be melted back into water, hauling in a chunk of ice may be easier and faster than dealing with extensive pipe or pump repairs. Needless to say, if there happens to be snow on the ground, you can also melt that down for water.

During the spring, summer, and fall seasons, it is very easy to take running water for granted. Regardless of when a crisis happens, your first winter off the grid can be a nightmare if you don't know how to manage frozen pipes, or how to keep water running.

At the very least, you should have a few heat sources on hand, an electrical power source, and also some alternative pump methods to help you maintain, or regain a supply of flowing water.