

# Clean Water

We deliver sustainable solutions to water problems and challenges. These water purification, water distribution and irrigation systems are self-sufficient. They are powered by the sun. They do not require any fuel or connection to the electrical grid.

## Portable solar powered water purification system

- Ultra-efficient high output system. Moderately priced. Designed for long-term service in even the harshest conditions, this water purification system produces safe, clean water without the need for power, fuel or infrastructure. Portable. Made in America. Tough, durable, built to last up to 20 years or more.
- Operates on solar power alone (solar direct), powered by solar panels in a tracker array which follows the sun for maximum efficiency. The number of panels required varies with the size of the system. When the sun rises, the system automatically “wakes up” and begins producing clean water. Outflow is continuous during daylight. Clean water can be pumped to a storage tank during day for later use.
- The Genesis/GSWPS system can also be run with a generator (not included) or with a connection to the electrical grid. A connector and manual transfer switch allow the system to operate on solar power, or on generator power or connected to the grid, providing great flexibility. This makes it possible for the system to produce clean water 24 hour/day, 365 days per year –rain or shine, night or day

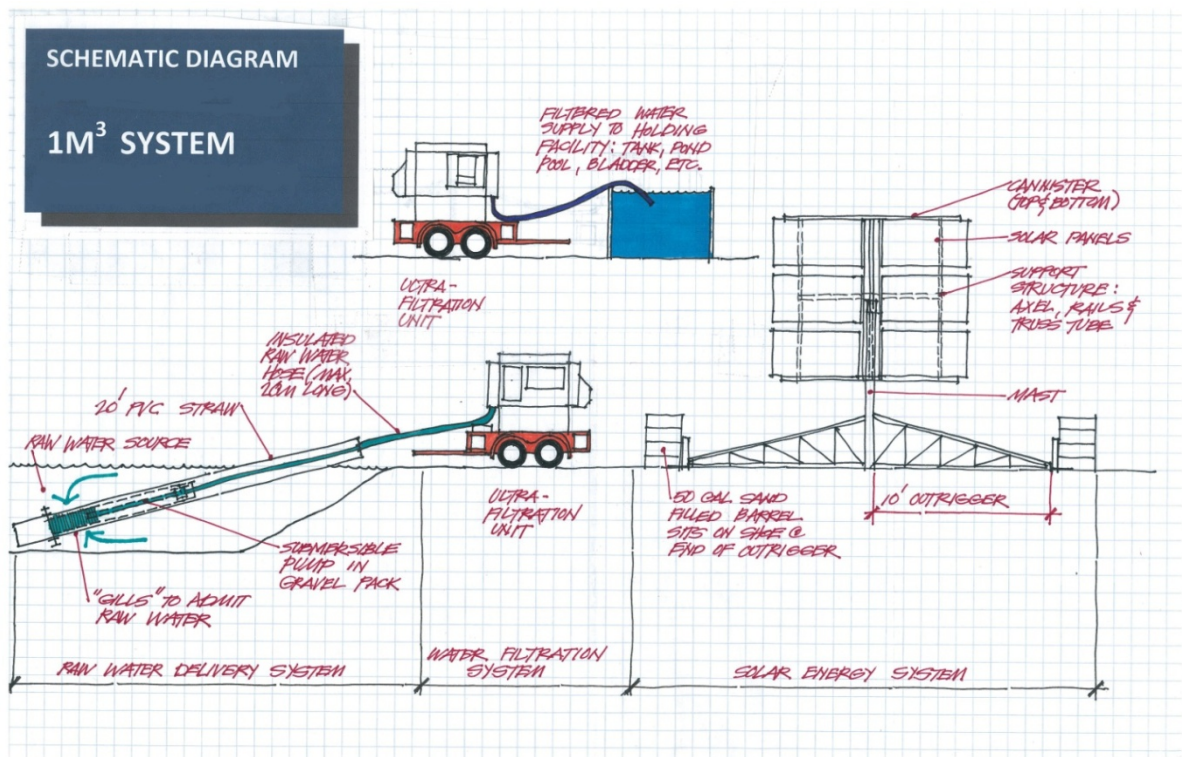


The tracking solar array provides maximum power, following the movements of the sun.



Built for quick deployment, as well as long term use, the trailer mounted system is protected against the elements and unauthorized access.

- Quick set up- two men can set up in half a day. Can be packed up for redeployment in 2 hours. Mounted on a rugged, reinforced trailer, the unit can be towed anywhere by a light truck. For security purposes, the trailer hitch is removable. The system can rest on its four built-in screw jacks, which allow the wheels to be removed to prevent theft.
- System is protected in a weather-proof steel cabinet with epoxy coating. Cabinet and battery box can be locked to prevent unauthorized access. Battery is solar charged, and is only for maintaining system's onboard electronics (not for running the system).
- Clean water output meets or exceeds World Health Organization standards. The water produced is 99.99 % (4-log) free of pollutants, bacteria, viruses and other pathogens. Total Suspended Solids (TSS) to less than 5 ppm. Turbidity to less than 0.5 NTU. These results are dependent on starting with feed water that is suitable for use. Filtration systems are custom designed for local water conditions.
- A unique pre-filtration "straw" draws in the source water and acts as a preliminary filter, eliminating particles that often foul pumps in other systems. This extends the life of the filters and of the system, and reduces system maintenance and operational costs.



- System can pump from wells up to 30 meters deep, or from surface sources, like rivers or lakes. System design can be modified for deeper wells.
- Specialized Advanced Oxidation Process (AOP) removes organic and inorganic materials in potable water and waste water applications. AOP is a highly-effective chemical-free process for oxidation and disinfection of source water from bacteria, viruses and colloidal organics/minerals.

- Multi-Stage Filtration Process (four different stages of filtration including advanced DLP nanofiber filtration technology)
- In addition to Advanced Oxidation Process water treatment systems, Ultra Filtration and Reverse Osmosis systems are available, if conditions require.
- Simple to operate. Simple to maintain. Maintenance takes just a few minutes each day. The 3 and 5 cubic meter systems feature a specialized hydraulic self-cleaning screen filter with lockout valve for backwash. Manual backwash for the 1 cubic meter system is a 20-second process
- A cabinet door provides easy access to this screen, as well as all filters and other system processes. Advanced Filtration
- Optional remote monitoring capabilities allow for broadband monitoring of the systems' performance.
- The system has a metered chlorine pump mounted on a 7.5 gallon tank, to add chlorine to the clean water before storage, if needed. Due to shipping restrictions, sodium hypochlorite (bleach) (typically 12%) will need to be sourced locally.

## Clean Water Production

The hours of full production with sunlight vary according to location and season. These examples are not specific to any location. They show the amount of clean water that can be produced with 4, 6 or 8 hours of sun.

## Production with Solar Power Only

system size	liters per hour	daily sunlight hours	liters per day	yearly production, in liters	potential production, over 20 years
<b>1 cubic meter</b>					
	1,000	4	4,000	1,460,000	29,200,000
	1,000	6	6,000	2,190,000	43,800,000
	1,000	8	8,000	2,920,000	58,400,000
<b>3 cubic meters</b>					
	3,000	4	12,000	4,380,000	87,600,000
	3,000	6	18,000	6,570,000	131,400,000
	3,000	8	24,000	8,760,000	175,200,000
<b>5 cubic meters</b>					
	5,000	4	20,000	7,300,000	146,000,000
	5,000	6	30,000	10,950,000	219,000,000
	5,000	8	40,000	14,600,000	292,000,000

If increased production is required, or sun light is not available, the system can be operated with a generator or with a connection to the electrical grid (mains), making it possible to produce clean water at any time. The system can be operated for as long as possible on solar power, to save fuel or electricity costs, and then can be manually switched to generator or grid as needed. This makes 24 hour a day production possible. The system can be scaled up, for stationary systems with even greater production capabilities.

**Production with Solar and/or Auxiliary Power (generator or grid tie)**

system size	liters per hour	hours of operation	liters per day	yearly production, in liters	potential production, in liters over 20 years
<b>1 cubic meter</b>					
	1,000	24	24,000	8,760,000	175,200,000
<b>3 cubic meters</b>					
	3,000	24	72,000	26,280,000	525,600,000
<b>5 cubic meters</b>					
	5,000	24	120,000	43,800,000	876,000,000

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