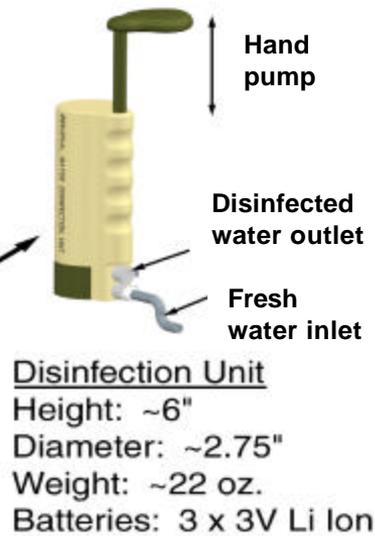


# Point Of Use Individual Water Disinfecter



Use scenario of integrated desalination and disinfection system

**OBJECTIVE:** The primary objective is to develop modular drinking water disinfection units that may be used in conjunction with a desalination system (to be developed in the Option Phase) with the ability to provide 70 ml/min of disinfected water from fresh water sources and weigh less than 24 oz. (Dry weight).

**BENEFITS:**

- On demand generation of disinfectant.
- No harmful disinfectant byproducts.
- Prevents biofouling.
- No after taste.
- Reliable.
- Easy to use.
- Modular.
- Very few moving parts.
- No maintenance required.
- Consumables: Off the shelf batteries.
- Inexpensive.

**SCHEDULE:**

Task	Month									Cost	
	1	2	3	4	5	6	7	8	9		
1 Design and fabricate a breadboard DWD1000_PROTO device.	█										\$51,273
2 Perform mechanical, functional, and microbiological testing of breadboard.				█							\$17,497
3 Design DWD1000_GEN I device.					█						\$17,819
4 Evaluate DWD1000_GEN I device design.							█				\$13,020
5 Demonstrate the DWD1000_PROTO device.									█		\$4,442
									<b>Total</b>		<b>\$104,051</b>
<b>Deliverables</b>											
Breadboard Individual Water Disinfection Unit							◆				
Complete Engineering Design Drawing Package										◆	

**TRANSITION:** Marine Corps Systems Command (MCCO) IWD

**TECHNICAL APPROACH:** The proposed drinking water disinfection device will use ozone generated by a miniature electrochemical ozone generator. Ozone is a powerful oxidant and disinfectant which is efficient at inactivating all classes of microorganisms. In the electrochemical ozone generator water serves as the source of oxygen atoms for ozone formation. The small quantities of water required by the ozone generator will be provided by a built in electrochemical deionization cell. We will develop and deliver a working breadboard system (DWD1000\_PROTO) showing feasibility of the technology. In addition, we will provide a complete design package for the DWD1000\_GEN I device which will incorporate modifications based on our test results of the breadboard. A complete cost and manufacturing analysis will also be completed.

**PERFORMER:**

Lynntech, Inc.; College Station; Texas