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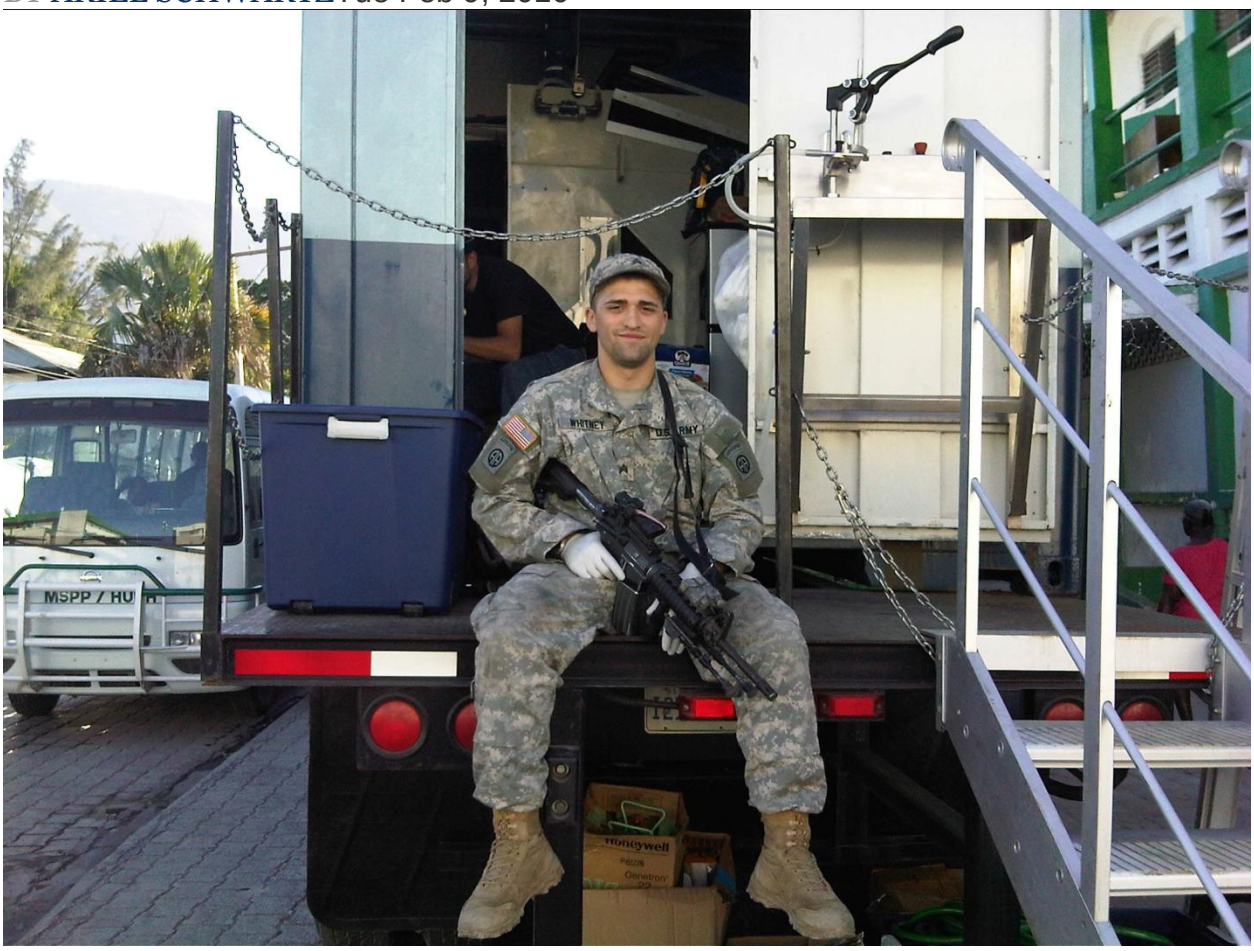
"Miracle Machine" Brings Clean Water to Haiti
BY ARIEL SCHWARTZTue Feb 9, 2010



Atmospheric water generators, or machines that extract water from humid air, have been around for awhile--we wrote about Atmospheric Water Systems' 11-stage filtration water generator last year, and Willie Nelson even sells his own atmospheric water generator. Now the pricey technology is being used where it can make a real difference--in earthquake-ravaged Haiti. Aqua Sciences shipped over one of its atmospheric water extraction machines at the end of January, marking the first time the device has been used for relief efforts. And so far it has been wildly successful.

People on the ground have supposedly dubbed the generator "the miracle machine." It's an accurate moniker--the device has produced thousands of gallons of clean water for drinking, wound cleansing and surgical scrubbing at the University Hospital Compound in Port-Au-Prince. According to Aqua Sciences CEO Abe Sher, the machine has actually succeeded in fulfilling fresh water needs at the compound.

It wasn't easy to bring the 40-foot-long machine to Haiti. Aqua Sciences worked with the Poarch Band of Creek Indians, the U.S Department of Homeland Security, the US Department of Defense, the U.S State Department, and USAID to get the atmospheric water generator into Port-Au-Prince. But now that it has been proven to work well in emergency situations, expect that the device will pop up in other water-starved emergency locales.

http://www.fastcompany.com/1545130/miracle-machine-brings-clean-water-to-haiti

Johns Hopkins Center for Refugee and Disaster Response: “The Water Dude” By Dr. Tom Kirsch

Johns Hopkins Center for Refugee and Disaster Response's Notes

“The Water Dude” By Dr. Tom Kirsch

Dr. Tom Kirsch

The provision of clean water is the most important public health function following a disaster. Water is the most critical need of the human body. Without it we can only function a few days, and survive only about a week. We need shelter too, particularly in very cold environments, but in Haiti that is not an issue. We can go without food for weeks.

The Haiti disaster is a prime example of the importance of water during the emergency relief period. In the first days after the earthquake the municipal water systems in Port au Prince were destroyed and there was little water available for the survivors. People and relief organizations struggled to get water from any source, no matter how dirty, for themselves and to provide it for others. Initially any water may be useful, just to keep the body going, but unless clean water is supplied quickly outbreaks of diarrhea and other infectious diseases will spread rapidly. In the Rwandan refugee camps in Goma, Zaire an outbreak of cholera, spread by contaminated water, killed more than 10,000 people in 1994. Sanitation and the management of human waste remains a critical problem in Haiti even 5 weeks after the event.

There are many ways to get water to those affected by disasters. The best is clean local sources, or to use any local supply after treating the water to kill dangerous bacteria and viruses. Water can also be brought in from the outside in tanker truck and off ships. Small chemical plants can be set up to treat local water, or to desalinate seawater, or even to extract pure water out of the air. The water is then often distributed in giant bladders (see photo) set up near the IDP camps for easy access.

Scott is the ‘Water Dude’, or ‘Water Guy’ at the University Hospital in Port au Prince. We never called him a water boy, because he was way beyond that. He ran the Aqua Sciences water extraction machine near the front entrance of the compound. It is a self-contained, tractor-trailer power by a diesel generator that extracts water right out of the air using some chemical process far beyond my understanding. All I know is that it provided water, a lot of water that was critical for our patients, our work and our survival. He is a lean guy in dark aviators and a battered, curled-brim straw cowboy hat but was a bit of a mystery, always polite, but mostly quiet as he ceaselessly went about his work. He never seemed tired, or bothered by the relentless heat and sorrow. Every day Scott started at the control station at the end of the trailer turning dials and pushing buttons like some mysterious Wizard of Oz. He spent most of his day, 10-12 hours of it, carrying big shiny Mylar bags of pure water around the compound to the wards, the patients and the tents of various NGOs. His work probably saved more lives than anything I did as a physician. Water is the basis of life and the core of public health and the 'Water Dude' made it and delivered.

April 22, 2009

Aqua Sciences, Inc. Selected by The Artemis Project™ as a Top 50 Water Company

Top Innovators in Global Water Technology recognized on Earth Day 2009

Miami, Florida *(April 22, 2009)* - Aqua Sciences, Inc. today announced that it has been chosen by The Artemis Project™ as a Top 50 Water Companies Competition winner. This award distinguishes Aqua Sciences as a leading company that is helping to build one of the great high-growth industries of the 21st Century. Aqua Sciences, Inc. was selected by a panel of industry experts based on an integrated matrix of four criteria: technology, intellectual property and know-how, team and market potential.

"The Artemis Project's Top 50 Water Companies Competition winners have excelled in key strategic areas in the emerging advanced water technology sector," said Laura Shenkar, Principal of The Artemis Project. "We are excited to spotlight these innovative companies for the first time on the world's stage and congratulate them for their achievements in introducing the solutions that will reinvent the water landscape."

Please visit **www.theartemisproject.com/competitionpage.html** for a full list of the 2009 Top 50 Water Companies Competition winners.

About The Artemis Project

Established in 2000, The Artemis Project is a boutique consulting practice that brings unique capabilities to 21st century water management, combining an understanding of the most advanced solutions with an international network of developers, investors and users of advanced water technology. As the leading authority on applying advanced water solutions to business operations, The Artemis Project specializes in developing holistic water management strategies for major corporations. The Artemis Project also supports product launches of advanced water technology into business operations worldwide. The Artemis Project actively participates in water industry events and supports environmental policy initiatives. More information is available at http://www.theartemisproject.com/.

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Monday, September 24, 2007.

Innovation Awards

Ahead of the Pack

Among this year's winners: a hypertension drug, a device that pulls drinking water from the air and a service that delivers TV over the Web

http://online.wsj.com/article/SB119022921763532686.html?mod=technology_main_promo_left

The Silver went to **Aqua Sciences Inc.**, Miami Beach, Fla., which has devised a way to pull drinking water from the air, even in the driest parts of the world. Similar systems work effectively only in places with high humidity. The technology uses a blend of salts to collect water, then employs a combination of heat, chemistry and mechanics to extract the water from the salts. Aqua Sciences has sold systems to the U.S. Army and the Federal Emergency Management Agency.

ENVIRONMENT

Abe Sher, chairman and chief executive, launched Silver winner **Aqua Sciences** in 2004, using technology from a team of Israeli scientists. The water-from-air system "looks very useful for disaster relief and may be much more practical than transporting water into remote, harsh environments," says Robert Drost, an engineer and director at Sun Microsystems Labs.

Editor's Note
We received more than 800 applications this year for our seventh annual Technology Innovation Awards -- a record, and 30% more than last year's tally. But our judges are a pretty demanding bunch. They gave awards to fewer than 4% of applicants, and found some categories lacked even a single idea worth recognizing.

WSJ Interview with AquaSciences CEO, Abe Sher: http://link.brightcove.com/services/link/bcpid452319854/bctid1201080252.

The Wall Street Journal's Technology 'Innovation Awards' recognizes technology that represents a breakthrough from traditional methods. A Wall Street Journal editor screened more than 800 applications, narrowing the field to about 150 entries. The judges picked the category winners and runners-up. A technology had to be a breakthrough from traditional methods, not just an incremental improvement.

MEDICINE INVENTIONS

The Rainmaker

The science-fiction writer Arthur C. Clarke once wrote that "any sufficiently advanced technology is indistinguishable from magic." Case in point: this water-harvesting machine, which can pull up to 500 gal. of drinkable water per day out of thin air. Its precise workings aren't public, but they use a chemical process similar to the one that causes salt to absorb moisture from the air (and clump up your saltshaker). The water machine isn't particularly portable—it's 20 ft. long--but it will be a godsend for disaster victims or troops in desert combat.

Inventor: Aqua Sciences

Availability: Now; about $300,000

To learn more visit aquasciences.com

INVESTOR'S BUSINESS DAILY
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Investor's Business Daily
A Miracle? It's Water Out Of Air
By J. Bonasia
Monday, October 30, 2006

FEMA, military among first customers for new hygroscopic technology

When Scott Morris took over as Florida's head of the Federal Emergency Management Agency in 2004, the state was reeling from the effects of a nasty hurricane season.

Morris recalls costly efforts to deliver clean drinking water to mobile medical teams and others in hard-hit areas. Back then, he wished his crew had access to what he now calls "the water machines."

Two months ago, the FEMA staff in Florida bought two 40-foot trailers that can extract thousands of gallons of pure water from the atmosphere each day.

"This is a revolutionary way for FEMA to do business in Florida," Morris said. "We're fascinated with this technology and very excited by its potential."

The technology uses a patented, natural salt-based solution that's hygroscopic. That means it's highly attractive to moisture. It literally strips water molecules from the atmosphere, rather than condensing the droplets on cold coils like a standard household dehumidifier.

Each mobile water system lets FEMA wring 2,500 gallons of water from the air each day. The cost is about 15-30 cents per gallon, compared with $15 or more per gallon to truck water to disaster sites.

The new water system comes in trailers with generators and containers to package the water. The system includes a reverse-osmosis device, itself not a new technology, that can squeeze 12,000 more fresh gallons per day from nearby sources of brackish water.

Well Water A Concern

FEMA hopes to anticipate future storms and get the trailers out to sites before disasters strike. This should also allow FEMA to send fresh water to remote areas. For instance, even when bridges wash out in the Florida Keys, a trailer could be delivered via barge or helicopter. "This is a big concern for rural communities in Florida that use well water," Morris said. "In the case of storm-water events, those wells can quickly become contaminated."

Aqua Sciences, a privately held firm based in Miami, developed the water-harvesting process. The system is so efficient that it even works in low-humidity desert settings such as Africa or the

Middle East, says Abe Sher, the founder and chief executive of Aqua Sciences. “We’re not going to any existing source of water,” he said. “We’re going to the sky.”

More than 5 million people worldwide die each year from lack of good water, according to the United Nations. This new hygroscopic breakthrough could be a lifesaver for many, Sher says. “The problem of water scarcity affects everyone on the planet,” he said. “Yet, our atmosphere surrounds the whole planet, and it’s the last untapped source of water in the world.”

Some of the world’s largest companies have gotten active in aspects of the fast-rising water industry. They include General Electric, Siemens, Suez and Vivendi.

Aqua Sciences expects demand for its system to spread beyond disaster relief. Other possible markets include systems for humanitarian aid, commercial uses for homes and businesses, and military applications.

The U.S. Army’s Tank-Automotive Research, Development and Engineering Center already is an Aqua Sciences customer. Tardec has a contract with Aqua Sciences to develop and test the system for military uses.

Soldiers in a desert setting require three gallons of water per day each, at a weight of more than eight pounds per gallon. That creates a big logistical burden and cost for the military. Also, water tanker convoys are targets for attacks in Iraq.

Aqua Sciences’ new water systems also could transform rural villages wracked by poverty and disease, says Ron Pernick, the head of Clean Edge, a market research firm for clean technologies. He says more than 1 billion people around the globe lack a steady source of potable water. “Conceptually, this is a very compelling solution,” Pernick said.

The hygroscopic technology does not work like a desalination plant, which takes the salt out of seawater. Desalination is expensive, with plants costing up to $1 billion.

Twist On Usual Method

Rather, Aqua Sciences uses a salty solution to take water out of the air. It behaves much as salt in a shaker acts like a sponge, clumping up on humid days. The salt also helps to keep water clean, as it is a natural decontaminant.

Systems for filtration or desalination are based on cleaning up old sources of non-potable water. The new water plants do just the opposite – they extract new clean water from air.

“Our products starts out with pure water, so our goal is to keep that water pure and clean, not to clean up dirty water or salty water,” Sher said. Morris says he expects FEMA in Florida can pay off the $1 million price tag for its two mobile water systems within four days of a disaster response, due to the greatly reduced cost of water.

“This is the type of technology that the government has to look into,” he said. “I want to get this technology battle-tested to show what it can really do.”