

WATER DESALINATION REPORT

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Company

IONICS VERSION 3.0

Ionics' desalination legacy is alive and well and has been commemorated in the name of the water industry's newest project development and water services company: Iv3 Aqua. The name is a nod to the pedigree of its three founders, Chairman of the Board Doug Brown, CEO Olaf Krohg and President Fred Hung.

Brown is a former CEO of Ionics, and oversaw its 2005 sale to GE Water. He then founded AquaVentures, which acquired Seven Seas Water in 2006, and which he took public in 2016. Krohg was Seven Seas' CEO and left the company earlier this year, while Hung was Seven Seas' president.

Former AquaVenture director Paul Hanrahan sits on the Iv3 board, and its executive team includes Seven Seas alumni Bill Shearan (VP engineering) and Khaled Ibrahim (VP business development). The company's website acknowledges its roots via the following graphic:



Following in the footsteps of its namesake, Iv3 Aqua will focus on delivering desalination, water, wastewater and reuse projects, although its remit also includes acquiring and rebuilding treatment plants and other related businesses. Target markets are understood to include Africa, the Middle East and Southeast Asia.

The company has secured capital backing from AP Moller Holding, a Denmark-based investment firm that focuses

on 'businesses that have a positive impact on society, with \$23.5 billion of assets under management.

Brown told *WDR*, "We are delighted to be working with AP Moller Holdings on this endeavor. They are an organization with tremendous global reach, have significant capital to deploy, and a strong desire to invest in socially responsible programs like providing pure water to the world's population. At Iv3 Aqua, we're extremely excited by the opportunity in front of us."

US

SOUTHWEST DROUGHT REPORT

As the lifeblood of the southwest, the Colorado River supplies water and hydropower to 40 million people in seven states. Lake Mead, which was formed by damming the river, is the Hoover Dam's reservoir. Last week, the Bureau of Reclamation announced that the lake would operate at its first-ever Level 1 Shortage Condition for the coming fiscal year, which begins on 1 October.

The news is particularly distressing for Las Vegas, which obtains 90% of its drinking water from Lake Mead.

The lake's water level has dropped 153 feet (46.6m) below its maximum level, and its 2021 inflow is 32% below average,



Lake Mead's 'bathtub ring' is dramatic evidence of the drop in water level

with the total Colorado River system's storage standing at 40% of capacity. As a result, the required shortage reductions in Arizona and Nevada's annual apportionment are 18% and 7% respectively, while Mexico's reduction will drop by 5% of its annual allotment.

DEWA is now seeking advisors for the next stage of the project, and submissions are due on 15 September.

Oman is also exploring the use of ASR, Dornier completed a pre-feasibility ASR study for the country's Public Authority of Electricity and Water in late 2018.

Abu Dhabi's Strategic Desal Water Supply

Besides its oil and gas reserves, Abu Dhabi is sitting on top of a three-month supply of fresh water.

Germany's GTZ and Dornier Consulting first proposed the idea of an aquifer storage and recovery (ASR) project to Abu Dhabi's 'higher authorities' in 1997. Feasibility and pilot studies followed, with a project tendered in 2008, and awarded in 2010. In December 2017, the \$350 million Liwa Strategic Water Reserve project—the world's largest reserve of artificially desalinated water—was completed, and is able to supply up to one million people with 180 liters (48 gal) per person per day, for three months.

To charge the aquifer, desalted water was pumped nearly 200km (125 mi) from the Shuweihat desalination plant, to the Liwa desert at a rate of 31,795 m³/d (8.4 MGD) for 27 months. The water was introduced into the aquifer via a combination of 80m (262 ft) deep injection wells and three gravity infiltration basins. It is estimated that it is possible to recover up to 85 percent of the injected water, and that it would likely comply with drinking water standards 824 days after infiltration.

Germany's Dornier Consulting designed and managed the project, which was constructed by a joint venture between South Korea's POSCO Engineering & Construction and Arabian Construction Company (ACC).

Transition

TAKURO SHISHIYAMA (1957–2021)

Takuro Shishiyama, the general manager of the water treatment division of Toray Industries, Inc., died of interstitial pneumonia on 3 August, after a 100-day battle with Covid-19. He was 64 years old.

Born in Hikone City, Shiga Prefecture, Japan, and raised in Kyoto City, he graduated from the Faculty of Law, Kyoto University, and joined Toray in 1983, after passing the National Civil Service Advanced Examination. His first job at Toray was with its RO membrane business, where he dealt with trading companies such as Mitsui & Company, on seawater desalination projects in the Middle East and industrial water projects in the United States.



Later, his responsibilities were expanded to include large RO treatment and brine conversion systems, which continues to be a very relevant business for the company. He also set up Toray's global sales organization, traveling around the world to meet international desalters and making many friends.

In 2006, Shishiyama-san launched Toray Membrane USA in California. It was the first overseas base for Toray's water treatment business, and as vice president of sales, he continued to strengthen the company's global sales teams.

He returned to Japan in 2011, and worked towards establishing Toray's presence in Saudi Arabia. He founded Toray Membrane Middle East and was appointed its president in 2015. His contributions in the Middle East were significant in establishing Toray's position in the Mega-SWRO market. In 2019, following his return to Toray's Japanese headquarters, he was appointed general manager of Toray's water treatment division.

Throughout his career, the always smiling Shishiyama-san led the way in contributing to the world's Sustainable Development Goals, with a particular emphasis on SDG 6: to ensure clean water and sanitation for all.

He is survived by his wife Kimiko, daughter Kazumi and son Haruka.

IN BRIEF

CalDesal will hold its Fall Program entitled, "**Pathways to Piloting**", virtually on Thursday 9 September, from 10:00-11:30 AM PDT. To see the agenda, and to register, visit <https://tinyurl.com/cmsesdw9>.

PEOPLE

Felix Wang has joined Gradiant as global vice president of marketing. Formerly with DuPont/Dow and CH2M Hill/Jacobs, he has a unique blend of experience in marketing, sales, engineering, and project delivery of global water projects and technologies, as a manufacturer, contractor and consultant. He may be contacted at fwang@gradient.com.

JOBS

NeoTech Aqua Solutions seeks a US-based Sales Engineer for its High Efficiency Reflex® UV Systems. The successful candidate will have US water treatment experience in the semiconductor, life sciences, food and beverage and other industrial water treatment markets. They will be expected to develop OEM distributors, and sell directly to end users and consultants. For additional information, contact CEO George Diefenthal at georged@neotechqua.com.