

Water Tech News Oil & Gas

INTEGRATED WATER, WASTEWATER AND RESOURCE RECOVERY SOLUTIONS • NOVEMBER 2016 • VOLUME 10, No.2

Dolphin Energy Awards Veolia a New Contract in Qatar

Veolia Water Technologies has been awarded a contract by Qatar Engineering & Construction Company to engineer, procure and deliver a wastewater treatment plant for Dolphin Energy's natural gas production and processing facilities in Ras Laffan, Qatar.

The wastewater treatment facility will provide quality water for reuse, reducing both the volume of wastewater currently being injected into the existing re-injection wells at the Ras Laffan gas plant, and the volume of desalinated water purchased from external sources. Kinetic Hydrate Inhibitor (KHI) polymers will also be eliminated from the residual wastewater. Start-up is scheduled for September 2017.

Industry regulators in Qatar have concluded that the presence of KHI polymers in the injected wastewater leads to long term reservoir damage, which is why it is essential to remove them from re-injected wastewater streams. Veolia was awarded a contract in 2015 for its proven HPD®

evaporators which will be used for KHI removal and distillate recovery. With this new contract, Veolia will also provide a pretreatment package upstream of the evaporators using its MPP Tilted Plate Flotation technology.



Thierry Froment, Chief Operating Officer for Veolia Water Technologies in the Middle East, said: *“Veolia has a rich history in Qatar supported by the development of a number of important projects, including one of the main treatment plants in Doha. We look forward to working again with Qatar Engineering & Construction Company to deliver this project for Dolphin Energy.”*

Ras Laffan is an industrial town about 80 km from Doha, whose economy is focused on the production of liquefied natural gas. The Dolphin Energy project is one of the largest cross-border energy projects ever undertaken in the Middle East. The goal is to provide natural gas from Qatar through pipeline to meet the United Arab Emirates' energy needs. Qatar, Oman and the UAE are involved in this project.

Veolia is already involved in a number of operations in Qatar, which include the design, build and operation of the Doha South Wastewater Treatment Plant and the implementation of a “Zero Liquid Discharge” process at Shell's Pearl Gas-to-Liquid complex in Ras Laffan.

Resourcing the World

As an industry leader, Veolia holds seminars about optimizing resource management for Upstream and Downstream Oil & Gas operations.

Learn more at:

www.veoliawatertech.com

Veolia Wins Long-Term Contract for Chemical Supply to TOTAL in Angola



Veolia Water Oil and Gas Angola Lda has been contracted by TOTAL to supply Veolia's range of Hydrex® chemicals for its Floating Production Storage and Offloading (FPSO) fleet operating off the coast of Angola. Veolia Water Technologies South Africa will manufacture and deliver 160 tons of chemicals every six weeks for the next three years to keep the company's Sulphate Removal seawater treatment units running at optimum capacity.

This chemical supply will augment the V-Care Service support contract Veolia Water Oil & Gas Angola Lda already has with TOTAL E&P Angola. "V-Care Solutions is our commitment to the oil and gas industry," says Hein van Niekerk, General Manager, Hydrex & Consumables, Veolia Water Technologies South Africa. "Through this program, we are able to offer onshore and offshore services as well as engineering, maintenance and training contracts."

Veolia will supply five primary chemicals to maintain membrane functionality of the seawater treatment units and ensure that the treated seawater used in the oil extraction process meets not only TOTAL's stringent quality standards, but conforms to global standards enforced throughout the industry. Shipped as 10 containers "FCL" every month, the 160 ton order comprises Antiscalants, two CIP Cleaners, Non-oxidizing Biocides and Dechlorination chemicals, all from Veolia's renowned Hydrex® brand.

"Over 75% of these chemicals are produced locally in Isando," adds van Niekerk. "What this means for TOTAL is that by eliminating high import costs, we are able to offer the chemical order at a fixed rate for the duration of the contract – a key factor for the client. Producing this quantity of chemicals is well within our capabilities, and to assist us with storage and container loading we outsourced to local specialist freight forwarders Intraspeed and Hellmann."

Veolia, using Intraspeed and Hellmann and its global logistics partners, will ship the chemicals to Sonils base in Luanda every four to six weeks. "Typically chemicals are shipped every four to six months to these operations, but owing to our local production we are able to guarantee the short shelf-

life of these products with our monthly orders," adds van Niekerk.

In addition, Veolia's test rig, supplied by Veolia South Africa in 2012 to validate the effectiveness of its cleaning chemicals, will serve as an onshore membrane cleaning and training facility in Angola. "With the growing market in Angola, Veolia continues to invest heavily in the country to cater for our complete water treatment portfolio," concludes van Niekerk.

Hydrex™ Chemical for Oil & Gas Applications

- > Scale & Corrosion Inhibitors
- > Chemical Sensors for Verification
- > Bacterial Control
- > H₂S & O₂ Scavengers
- > Iron Sulfide Dissolvers
- > Hydrate Inhibitors
- > Emulsion Breakers
- > Foamers & Specialty Surfactants
- > Paraffin & Asphaltene Deposit Control
- > Calcium Naphthenate Inhibitors
- > Produced Water Recycle & Reuse
- > Odor Abatement
- > Friction Reducers & Cross Linking Agents

Veolia delivers MPPE® water treatment unit for Ichthys LNG Project FPSO

Veolia's MPPE® unit will be used to treat the gas/condensate produced water stream on the Ichthys LNG Project's floating production storage and offloading facility (FPSO). The MPPE® unit will remove dissolved and dispersed toxic constituents like aromatic (BTEX), polyaromatic hydrocarbons (PAHs) and oil, resulting in a Zero Harmful Discharge to the environment.

The ± 450-ton MPPE® module unit (19.1 x 16.5 x 18.2 meters), containing two parallel MPPE® units, has been successfully loaded to Korea and placed on the FPSO.

The INPEX-operated Ichthys LNG Project will involve offshore preliminary processing of gas from the Ichthys Field to remove water and extract condensate before being transported to onshore LNG processing facilities in Darwin via an 890-km pipeline. Most condensate will be sent



to an in-field FPSO from which it will be shipped to market. The Ichthys LNG Project is expected to produce up to 8.9 million tons of LNG and 1.6 million tons of LPG per annum, along with approximately 100,000 barrels of condensate per day at peak.

During the production of gas and condensate, formation and dehydration water is co-produced containing toxic dissolved and dispersed aromatics, aliphatics and polyaromatic hydrocarbons. The MPPE® technology is able to remove all of these toxic compounds securely and in a single process to comply with the strictest requirements for Zero Harmful Discharge. The two fully automated MPPE® units are delivered in one module.

The MPPE® unit was designed and built following the highest offshore standards and is designed for an operational lifetime of 40 years. It fulfills the present and future health, safety, environmental and ergonomic requirements. *"We are very proud to deliver this high-tech water treatment system to help INPEX achieve their ambitious goals",* said Erik Middelhoek, Managing Director of Veolia MPP Systems. *"It was a challenging project with a fantastic end result".*

INPEX CORPORATION is a global oil and gas exploration and production

company headquartered in Tokyo, Japan.

Involved in more than 70 projects across more than 20 countries, INPEX is ranked in the top 100 global energy companies and is listed on the Tokyo Stock Exchange. www.inpex.com



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Mobile Water Treatment Anytime, Anywhere Fast Mobile Water Services

Veolia Water Technologies has strengthened its “Anytime, Anywhere” water treatment capabilities by adding 600 and 900 gallon per minute (GPM) Reverse Osmosis (RO) units to its extensive mobile water services fleet.

The new units join a fleet of portable trailers and containerized water and wastewater treatment solutions for temporary, emergency and long-term water treatment applications. By combining various technologies, Hydrex™ chemistries and field services, customers have the flexibility to choose a stand-alone mobile equipment rental or complete, integrated service. Current units in the US fleet are Reverse Osmosis, Actiflo® TURBO Clarifier, Filtration, Softening and Demineralization.

Potential applications served include physical and chemical separation for suspended solids, turbidity, hardness and metals removal; membrane separation and demineralization for TDS (total dissolved solids) reduction, specialty ion exchange and heavy metals removal.

According to Michael Reyes, Veolia Mobile Water Services National Sales Manager, mobile water services are typically used in refineries for:

- Emergency situations, where a malfunction of existing equipment requires quick, emergency service to enable continued plant operations;

- Planned maintenance to allow existing equipment to be taken offline for maintenance or repairs;
- New plant processes, requiring additional water treatment capacity, such as changing a feedstock;
- Temporary treatment when additional water treatment is needed, such as for temporary changes in production rates;

place) capabilities, to meet water purity requirements with a minimal amount of manpower.

The 900 GPM High Recovery RO technology relies upon a patented design and operating function to provide higher recoveries and higher permeate flux rates than traditional RO technology. Through a closed



- Plant expansions in which increased production demands require additional treatment capacity.

The new mobile reverse osmosis rentals can operate in either single or double pass orientation, with flows ranging from 100 GPM up to 600 GPM. The systems are fully automated and come complete with CIP (clean-in-

circuit recycling of the RO feedwater, the membranes are less susceptible to fouling by water impurities and are able to capture up to 95% as permeate, reducing needed pretreatment capacities and saving valuable water.

For more information, contact Michael Reyes at michael.reyes@veolia.com

WATER TECHNOLOGIES