

TECHNOLOGY HORIZONS

A publication by Zetron, the pilot plant specialists

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IN THIS ISSUE

Zetron goes underground to deliver bioleaching unit to Hatch

Zetron delivers a state-of-the-art polyethylene pilot plant to Chevron Phillips

Zetron supplies novel membrane separation unit with creative "inside-the-box" thinking

Strengthening the team in Rotterdam's City game

AND MORE!



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DEEP ORE EXTRACTION BY BIOLEACHING – ZETON GOES UNDERGROUND

In 2015, the BIOMore project was started as an EU Horizons 2020 initiative to research the possibilities of economically attractive extraction of raw material ores from depths exceeding one kilometre. Up to this depth ore deposits are widely exploited, but forecast shortages have necessitated investigations into deep ore mining. Several mining companies, engineering firms specializing in mining, and research institutes have joined the BIOMore project to research the coupling of solution mining and bioleaching to recover metals from these deep ores in an economic, sustainable and environmentally acceptable manner.

International company Hatch, one of the partners in the BIOMore project, and an engineering and service provider to the mining industry, already has had several collaborations with Zetron over the last two decades. For this project, Hatch contacted Zetron B.V. to design and build the pilot plant that will be placed inside a copper mine of project partner KGHM Polska Miedz in Poland.

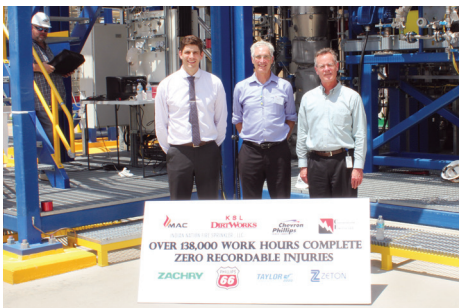
Sustainability is at the heart of the BIOMore project and Bioleaching is a key component to reach the Sustainable Development Indicators projected by the program.

Approached in April 2016, Zetron was challenged to design and build the pilot

plant in time for shipment by the end of July, a fast-track four month schedule. The combined expertise of Hatch and the scale specific know-how of Zetron yielded a pilot plant constructed from metal and engineering plastics to resist the acidic nature of the process and meet all the high quality standards, budgets and the accelerated schedule.

Zetron is proud to have been once again selected as a trustworthy partner to reach Hatch's goals, and the delivery of this pilot plant to its testing ground at a depth of ~1.2km marks a new high (and, in this special case, also a record low!) in our collaboration. ■

CHEVRON PHILLIPS ANNOUNCES COMPLETION OF POLYETHYLENE PILOT PLANT



Bartlesville, Oklahoma - (July 27th, 2016) Zeton was proud to join Chevron Phillips Chemical Company LP (Chevron Phillips Chemical), and its President and CEO Peter Cella, during the announcement of the completion of its polyethylene pilot plant at its research facility in Bartlesville, Oklahoma. The state-of-the-art 20 skid facility replaces a decades-old pilot plant at the same site. The new unit will enable polyethylene research to take place prior to implementation in full scale operations at their new \$6B facility along the Texas Gulf Coast and other locations throughout the world.

Zeton was selected by Chevron Phillips Chemical to complete preliminary engineering for this pilot plant in August

2013. The project continued, with basic engineering commencing in June 2014, and the contract for detailed design, procurement and fabrication was awarded in March 2015. The modules were delivered from Zeton's Burlington, ON facility to Chevron Phillips Chemical's Bartlesville site in January 2016.

Zeton is proud of its long term relationship with Chevron Phillips Chemical. Over the past decade, Zeton has supplied several lab scale systems and pilot plants to support Chevron Phillips Chemical's strategic research and development programs, and hopes to continue to provide service in the future. ■

ZETON DELIVERS NOVEL MEMBRANE SEPARATION UNIT FOR PETROCHEMICALS APPLICATION



Zeton Inc. was approached in Q4 2015 by a multinational petrochemical company for the supply of a novel membrane separation unit. The project had some unusual requirements. Firstly, the skid would need to be moved frequently, to test sample streams at various points in the facility, so portability and ease of sampling were key. Secondly, the required instruments and data logging equipment for the process parameters

to be measured needed to interface with the existing plant DCS. Thirdly, the unit needed to meet Class I, Zone 1, Groups IIA, IIB electrical classification, and withstand annual variations in ambient temperature ranging from -40 to 40 deg. C, while maintaining the process temperatures between 0 and 20 deg. C. And, last but not least, the sensor assembly had to be visible from outside the enclosure, and the enclosure itself had to be protected from lightning strikes.

The solution developed jointly by our customer's team and Zeton's involved housing the membrane unit and instrument array in a custom reinforced steel cabinet mounted on industrial castors. Three Dopak sample systems were installed on the outside rear of the cabinet for ease of access. Remote antennas were installed in the roof of the

cabinet to ensure a strong signal, and an external power connection was provided so that an extension cord could be used to power the unit anywhere in the plant. The cabinet itself was heated and insulated, and was equipped with double-glazed windows for additional heat conservation, and a lightning protection grid to guard against lightning strikes.

An additional feature provided by Zeton was a custom membrane housing to withstand higher process pressures than the standard, commercially-available membrane housing could offer.

The unit has been delivered to site, and our customer reports it has met or exceeded their expectations. Congratulations to project manager Grant Girouard, and our customer's and Zeton's project teams, on a successful project! ■

TEAM SPIRIT HIGHLIGHTING THE ACCOMPLISHMENTS OF OUR STAFF IN THE DUTCH AND CANADIAN OPERATIONS

STRENGTHENING THE TEAM IN ROTTERDAM'S CITY GAME

This past summer, Zeton B.V.'s employees and their spouses celebrated Zeton's 30th anniversary and enjoyed an overnight stay in Rotterdam. Upon arrival, teams were chosen to play the iPhone city game, a group activity with great discoveries, exciting team challenges, city exercises, complex questions and a spectacular highlight - the RIB-High-Speed-Harbour-Tour-Experience! The winning team was announced during a group dinner in Rotterdam City in the evening.

The next day, new city experience activities like a harbour cruise, a tour through the city's brewery, and a walking tour through the architectural City of Rotterdam (see picture) were offered. The city tour was ended with a lunch at the top of the Euromast observation tower, with beautiful views of the Port of Rotterdam and the surrounding city.

As we begin our 31st year, we can all look back on a very enjoyable weekend, with friends and family and a renewed team spirit!



IN BRIEF

HIGHLIGHTING RECENT AND COMPLETED PROJECTS AND ENGINEERING STUDIES

- A food additive plant
- A miniature hydrotreater lab scale system
- Several pharma processing modules
- A basic engineering study for an SNG demonstration plant
- A Grace DCR FCC pilot unit
- Several ACE Technology® Model R+, C, AP and HT100-2 units
- A hydrothermal liquefaction (HTL) pilot plant
- A basic engineering study for a copper leach pilot plant



A refinery pilot plant for a pulp and paper application



An oil filtration module



A lab scale GTL catalyst test system



A 10 kg FCC catalyst steam deactivation unit with CPS



CONTACT US

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OR ITEMS IN THIS ISSUE OF HORIZONS, PLEASE CONTACT:

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