

OYO GEOSPACE @ WORK

PRODUCTS AND SERVICES **AT WORK** IN THE WORLD

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Shell Choses OYO Geospace for Life-of-Field Seismic Monitoring Offshore Brazil



BP's Valhall field LoFS monitoring system undergoing testing prior to seafloor installation.

It was OYO Geospace that provided the world's first Life of Field Seismic (LoFS) system for permanent seafloor monitoring at BP's Valhall field in the North Sea in 2003. That system has been monitoring and recording repeated marine sourced surveys ever since. In addition to conducting periodic 3D sourced surveys, the nearly 10,000-channel subsea seismic system monitors all seismic activity in the vicinity of the Valhall reservoir continuously and in real-time.

Since the Valhall LoFS was installed, OYO Geospace technology has been used for both LoFS and retrievable applications around the world and in deep water areas where the water depth is as much as 1600 meters.

Because of that successful deepwater track record, we have now been selected by the BC-10 Consortium operated by Shell Brasil Petróleo Ltda. to provide a 100+ kilometer deep water seabed seismic reservoir monitoring system for the BC-10 field off the coast of Brazil.

"Both our permanent and retrievable systems have proven themselves to be robust and successful in various applications and water depths, and I think that gave Shell a great deal of confidence in partnering with us," says Peter Zhang,

continued on next page

BC-10 field is located in the Campos Basin, in water depths of 1500 to 2000 meters.



LoFS Off Brazil, *continued from page 1*

OYO Geospace Manager of Technical Sales. “Our exceptionally high channel capacity and reliability were certainly other factors in our favor.”

OYO Geospace’s GeoRes SubSea System is an advanced multi-component ocean bottom seismic recording system featuring scalable system architecture enabling tens of thousands of channel-count recording capability. The system is designed for very high in-water reliability and performance, minimizing or even eliminating costly maintenance over the life of the system. The system’s four-component sensors are digitized and sealed in modules then molded in long cable lengths, forming “connector-less” subsea sensor array cables. The sensor array cables are custom manufactured by OYO Geospace to the customer’s specific project specifications in its Houston, Texas, facility. The system delivers continuous data recording in real time and can also be configured for unmanned operation.

The sensor cable array of the GeoRes SubSea System will be laid on the sea floor in 1,700 meters of water depth, where it will map production-induced changes inside the reservoir during Phase II water injection. Through acquisition of more and better data, Shell engineers will dramatically enhance their operational and production decisions over the life of the reservoir.

Monitoring these changes will help oil and gas engineers track how the water and oil are flowing and inform the drainage strategy, placement of new wells and depletion plan to maximize total production from the field. This kind of real-time reservoir management also reduces the number of dry holes and thus speeds production development.

Delivery of the new system is planned for December, 2012. ■

Value of LoFS

Cost savings

Additional production earlier

Better selection of well locations

Fewer nonproductive or suboptimal performing wells

HSE: fewer people, less fuel, minimal helicopter and marine maintenance work

Shear waves: improves top of reservoir imaging

OYO Geospace will provide over 100 kilometers of deepwater (1700 meter water depth) seabed seismic reservoir monitoring system for the BC-10 field, offshore Brazil.



PRESIDENT'S PAGE

In every issue we chronicle the ways in which Geospace supports its customers, vendors and community. This issue is no different. In it, you will see how after our initial entry into the ocean bottom cable (OBC) market in the North Sea Valhall Field, we worked with our clients to enhance our already best-in-class solution. Our SubSea system is perfect for Life-of-Field Seismic (LoFS) studies, which require capturing seismic data using permanently installed seabed OBC systems. The data collected over a span of time has already demonstrated its value in exponentially increasing the productive life-of-fields. I expect you'll be reading more about our role in the BC-10 field LoFS project in offshore Brazil in subsequent issues.

We've also seen increased interest in our wireless data acquisition system sales, with new sales and orders pushing us past the 200,000-channel mark. Contractors are discovering a variety of ways to deploy our cableless systems to their advantage. They are seeing real benefits in the field through improved landholder relations, productivity and reduced operational costs.

We've always believed that with success comes a number of responsibilities. We have a responsibility to understand and exceed our customers' needs in our products and services. We also need to be responsive to the communities in which we and our customers operate. We also have a responsibility to our stakeholders to provide them the best returns possible on their investments in us and to make them proud to be associated with us and the way we practice our business. In this regard, we enjoy supporting events in the community, particularly those where the participants dedicate significant time and effort themselves.

Within our company, Shirley Presley leads our annual Breast Cancer walk and raises significant funds to fight that deadly disease. This year we also supported two teams in the annual BP MS150 bike ride from Houston to Austin to fight Multiple Sclerosis. The riders we supported trained on their own time throughout the winter months, sometimes in very unpleasant weather conditions. This is the kind of personal commitment we support and we're always glad to contribute, making their efforts in the fight just a bit more worthwhile. ■



Gary Owens

Cumulative GSR Channels

Over 169,000 Channels
Sold / Available for Rent
(data as of March 31, 2012)



OYO Geospace Gives BP MS 150 Riders a Push

Mike Yates has raised more than \$70,000 to support the fight against Multiple Sclerosis, logging 13 rides in the annual Houston-to-Austin MS 150 event. For James Bogardus it was ride number six and his first as team captain at Geokinetics. He raised more than \$12,000 this year alone.

That kind of dedication deserves support and encouragement, which is why OYO Geospace sponsored both riders this year, donating a total of \$10,000 to the National MS Society.

MS is an elusive immune system disorder that can range from mildly debilitating to deadly.

“My connection to MS started with my high school geography teacher – during my time at high school he became confined to a wheelchair, and some years later died of complications of his MS,” says Yates. “More recently I met a young geologist at a dinner for MS 150 riders who was riding the BP MS 150 for the first time who told me that she has MS; she had to quit running marathons because her feet would go numb and she would trip – she now rides long distances instead, as with her feet clipped into her pedals the numbness isn’t as big a problem. Her brother is an MS researcher, and her family believes they will see a cure for MS before it takes too great a toll on her. I ride for people like her.”

MS is also personal for Bogardus and his wife Whitney (who just completed her 10th ride). He has friends and acquaintances living with the disease, which also claimed the life of his neighbor’s father.

Approximately 400,000 Americans have MS, and it affects about 2.5 million people worldwide. ■



James Bogardus and wife Whitney at the Fairgrounds in La Grange.



Apache's Mike Yates pedals toward his 13th MS 150.

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