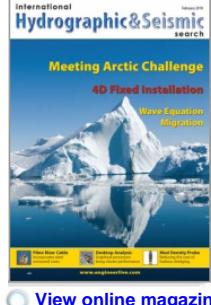




More information here.

rotronic
LEADING IN HUMIDITY MEASUREMENTAIR CHIP
TECHNOLOGY

[HOME](#)
[CONTACT US](#)
[SITE MAP](#)
[SUBSCRIBE](#)
[RSS FEED](#)
[YOUR CAREER](#)
[PRODUCTS](#)

[View online magazine](#)

[4D Fixed Installation](#)
[Seismic](#)
[CSEM](#)
[Data Processing](#)
[Equipment & Cabling](#)
[Forward View](#)
[Hydrographic Survey](#)
[Data Interpretation](#)

European Magazines

[Design Engineer](#)
[Process Engineer](#)
[Chemical Engineer](#)

Worldwide Magazines

[Asia-Pacific Engineer](#)
[Oil & Gas Engineer](#)
[Power Engineer](#)
[Energy Solutions](#)
[Hydro & Seismic](#)
[Electronics Engineer](#)

Hydrographic & Seismic - Hydrographic Survey**Survey data vital to selecting routes for subsea pipelines**

Long subsea pipelines need a safe and stable route to shore. Pat Fournier, Senior Geophysicist with Australia's Neptune Marine Services, explains the need for good quality survey data from beneath the seabed.

Australia's North West Shelf (NWS) is an isolated offshore geographic province extending 2400km along the northwest margin of the continent and is Australia's largest oil and gas region. Four major sedimentary basins occur along the shelf, namely the Carnarvon, Canning, Browse and Bonaparte, from south to north respectively. The southern margin of the NWS is approximately 1200km north northwest of Perth, the capital city of Western Australia and the administrative centre for most exploration activity and associated oil field services.

Since the discovery of oil in Australia in 1953 at the Rough Range-1 well, onshore Carnarvon Basin, interest in oil and gas exploration has increased. In 1964 oil was discovered on Barrow Island and the NWS continued to grow and eventually became Australia's premier oil and gas province replacing Victoria's Gippsland Basins.

In the 1960s and 1970s regional offshore geological and geophysical exploration of the NWS led to the discovery of natural gas and condensate deposits in the Carnarvon, Browse and Bonaparte Basins, commencing with the Rankin discovery in the early 1970s. With gas replacing fuel oil in Australian homes and factories, increasing global energy demands, and LNG exports becoming a more viable source of income for the Australia economy, oil and gas companies and their export partners are looking to further exploit the large natural gas reserves in the Australasian region and specifically along the NWS.

Australia currently has two LNG processing plants; the North West Shelf Venture (NWSV) in Karratha and the Darwin LNG Plant, that deliver gas to local and international markets. These two facilities are located approximately 1800km apart along one of the most natural gas rich and remote coastlines in the world. The remoteness of the NWS is becoming less of a deterrent to investors as infrastructure develops in the region (with the aid of increased government support), and the large size of new natural gas discoveries offsets the high financial commitment required by the oil and gas companies to develop their fields.

The new large natural gas discoveries along the NWS have occurred towards and beyond the 200m isobath (shelf break) requiring the design and construction of long subsea pipelines to deliver the gas back to the coast for processing and export. The new subsea pipelines can either tie back to the existing LNG plants, or the oil and gas companies can incorporate the design of new processing facilities as part of their proposals. Because of the large investment commitment these development projects pose for oil and gas companies, the aim is to mitigate the potential of damaging their assets both during installation and once they are installed on the seabed. Part of this involves contracting hydrographic survey companies to map the proposed subsea pipeline routes to avoid potential pipeline instability and damage.

One such company specialising in this work is Neptune Marine Services based in Belmont, Western Australia. Neptune Marine Services is established as one of Australia's leading providers of integrated engineered solutions to the international oil and gas, marine and renewable energy industries. Neptune Geomatics, a subsidiary of Neptune Marine, is a hydrographic survey company specialising in MODU positioning, geophysical site surveys, pipeline route and cable route surveys and offshore construction positioning support services.

In 2008, Neptune Geomatics was awarded a contract to survey a proposed 870km subsea gas pipeline route traversing both the Browse and Bonaparte Basins and terminating in Darwin Harbour. The pipeline is designed to deliver gas to a new processing facility in Darwin. The remoteness and duration of the proposed survey work, coupled with the tight reporting deadlines to tie in with the front-end engineering design (FEED) of the project, required reliable and proven survey equipment to be used during the campaign.

The objectives of the survey were to obtain reliable sub-bottom profiling data to accurately map the shallow geology in the survey area of >5000 line km through which the proposed route would run. The Applied Acoustics' Sub-bottom Profiler, the CSP-D 2400 was the preferred energy source to power the Applied Acoustics' AA301 Boomer for the duration of the survey. The CSP-D 2400 charged at 1000 joules/second for a continuous two month period, with no equipment faults. This proved to be a significant advantage during the survey as it provided the survey crew and pipeline engineers with good quality data to assist pipeline route planning and design.

The efficient and reliable progress achieved during the route survey allowed for further site survey work in the field to investigate the suitability of the shallow geology for the planned seabed infrastructure. The objectives of the field work required the acquisition of sub-bottom profiler data in increased water depth while achieving approximately 150m sub-seabed acoustic penetration. During this phase of the survey, the Applied Acoustics' Squid 2000 was teamed to the CSP-D 2400. The CSP-D 2400 charged at 1500 joules per 1.5 seconds for a continuous three week duration, with no equipment downtime, and assisted in acquiring good quality sparker data to the required depths and the client's objectives.

Due to the success of the survey campaign, Neptune Geomatics will continue to use the proven and reliable sub-bottom profiler equipment provided by Applied Acoustics Engineering to meet its client's objectives. Easily installed and operated, the CSP-D 2400 energy sources generate a safe energy supply. In the two years since purchasing the units, Neptune Geomatics has enjoyed repeatable, reliable energy outputs to towed boomer and sparker sound sources and remains confident moving forward with the technology into the future.

Enter X at www.engineerlive.com/ihsx

[Make Engineer Live my homepage](#)

2nd February 2010

Search**Your Career**

[Click here](#) for the best career opportunities from some of the world's most successful engineering companies.

FREE Subscription

[Click here](#) for FREE subscription to Engineer magazines

FREE Newsletter

To receive our free weekly newsletter please enter your email address below

ITCM designs and develops special-purpose machinery and production processes with core strengths in [web processing](#), powder dosing, novel packaging and high-speed assembly automation.

