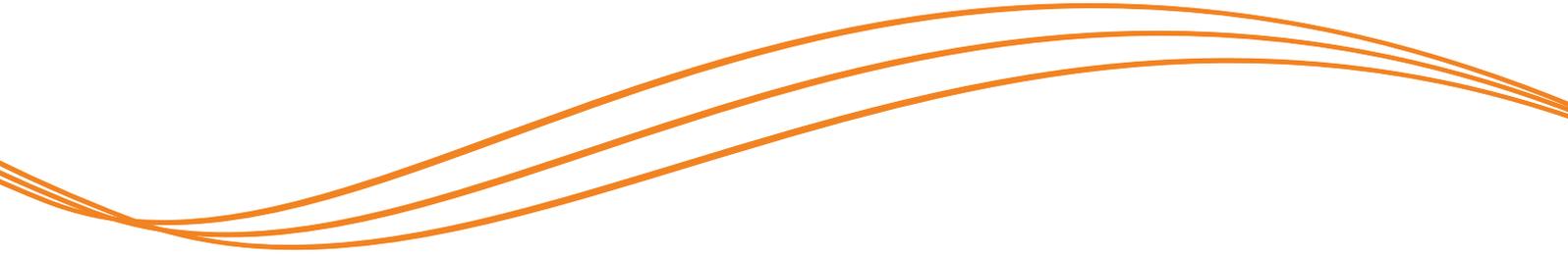




Exploration and Beyond...



Technology and Services Brochure

EXPLORATION AND BEYOND...



Marine Geophysical Services

WGP's operational expertise spans across the **Exploration** sector discovering new hydrocarbon reserves, **and Beyond...** into production, presenting contemporary services to increase the value and output of active reservoirs.

By specialising in seismic projects driven by modern technology and supporting new methods, WGP has kept at the forefront of the industry. Focused to provide bespoke operational solutions for projects that will become increasingly important as exploration continues to move into ever more challenging frontiers.

WGP's Project Management skill sets provide contemporary technical knowledge, creating real solutions for projects in often restricted and difficult marine environments. This has resulted in a proven track record for taking clients' ideas and turning them into safe and achievable operations.

BRINGING TO LIFE SOUND SOLUTIONS FOR RESERVOIR MANAGEMENT PRACTICES



Life of Field Seismic

With operational performance since 2003, WGP understands the drivers that Energy Companies face to improve recovery from new and existing assets.

Also known as Time Lapse Seismic or 4D Seismic, WGP offers a full acquisition service for Life of Field Seismic projects to maximise oil recovery through reservoir management practices allowing for:

- Enhanced Oil Recovery
- Identification of by-passed oil
- Reduction of infill drilling risks
- Reduction of field traffic
- Seismic on demand

Experience in WGP's services towards the next generation of energy supplies includes:

- **BP's Valhall LoFS** project in the North Sea, utilising a PMSS™ system.
- **Statoil ASA** for long term seismic acquisition services for permanent reservoir monitoring of the **Snorre and Grane** oil fields in the Norwegian sector of the North Sea.
- **BP's Chirag Azeri Reservoir Seismic Project** (CARSP) in the Caspian Sea, tasked to design, develop and manage one of the largest LoFS 4C/4D OBC systems in the world.

ACTIVE EXPLORATION IN PIONEERING LOCATIONS WORLDWIDE



Seismic Acquisition

The need to discover new and unexploited hydrocarbon reserves is resulting in frontier exploration in the world's more remote and challenging regions. WGP has led the market in this type of niche seismic exploration for the last ten years. Such frontier operations have seen WGP obtaining seismic data offshore Ecuador, and for two summer seasons (2011/2012) operating a Portable Modular Source System (PMSS™) in the high Arctic.

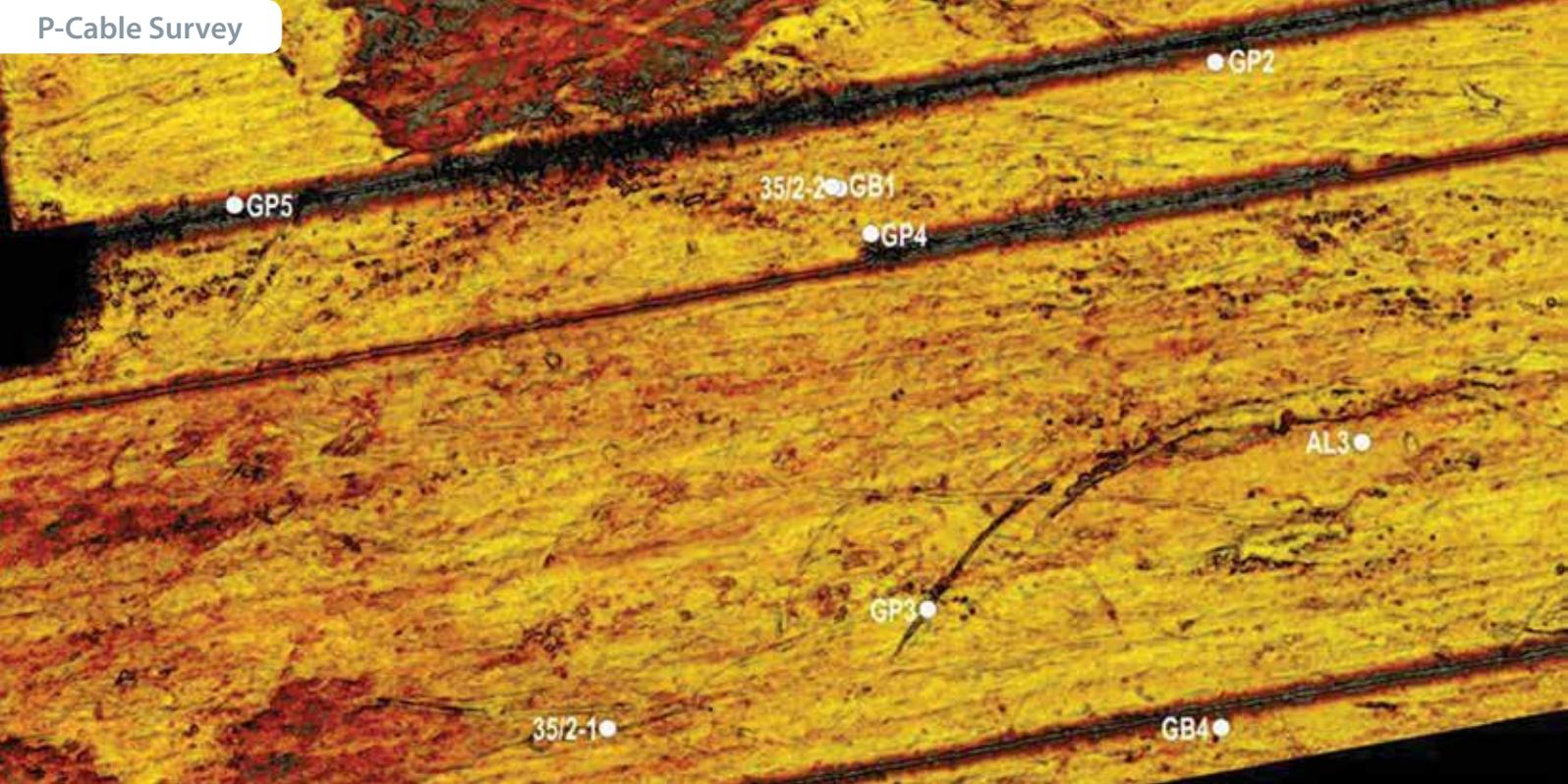
Ecuador:

The challenging activity comprised of an extensive OBN (Ocean Bottom Node) survey program offshore Ecuador in transition zone and shallow waters. In keeping with WGP's root philosophy of operating in frontier locations, this project demonstrated our interest and capability of undertaking new challenges.

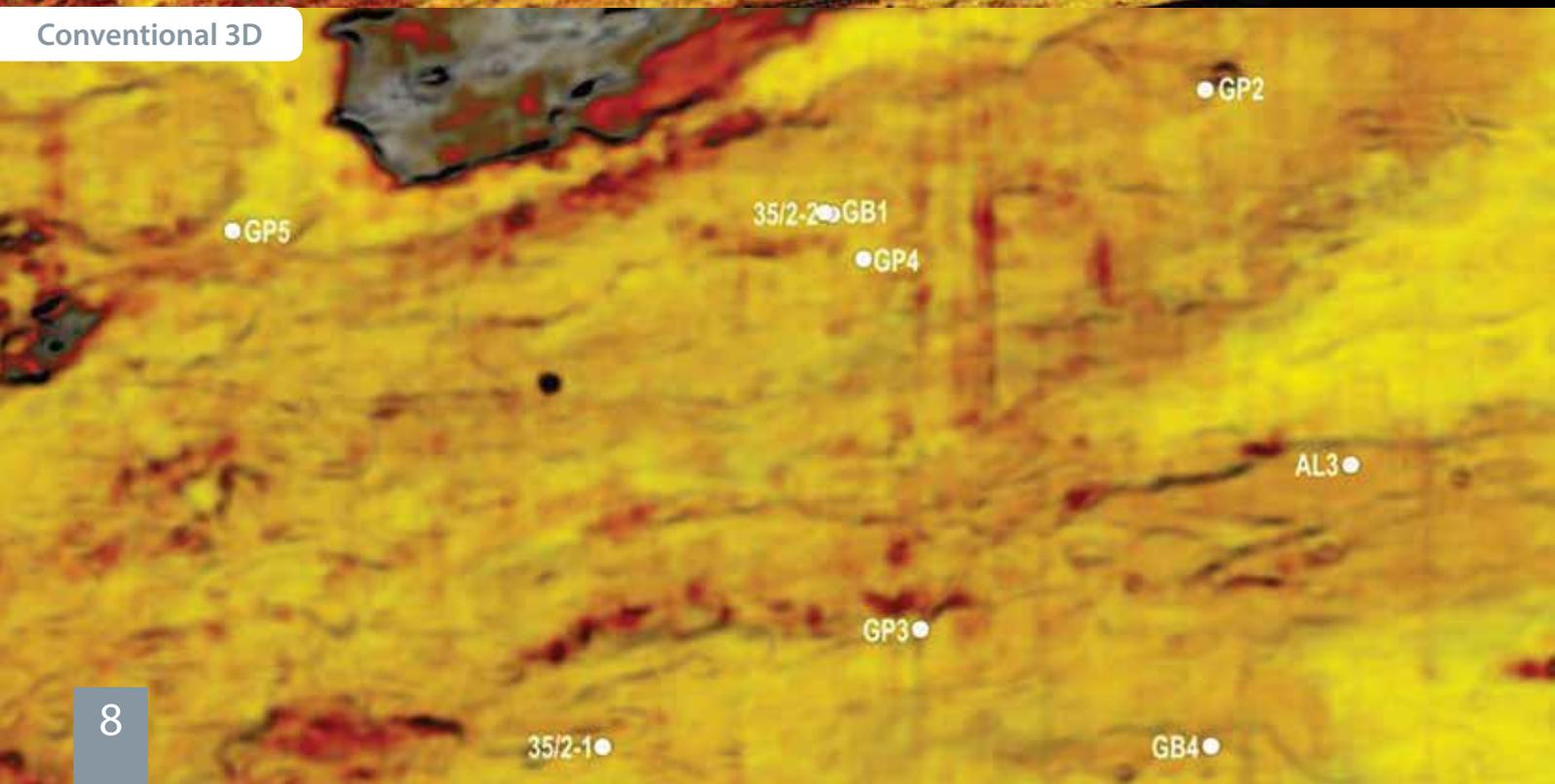
Russian Arctic:

WGP worked for two summer seasons (2011/2012) on a survey program for the Russian State to delineate the country's continental shelf, including acquisition of data within 300 km of the North Pole.

P-Cable Survey



Conventional 3D



Hi-Res 3D Seismic

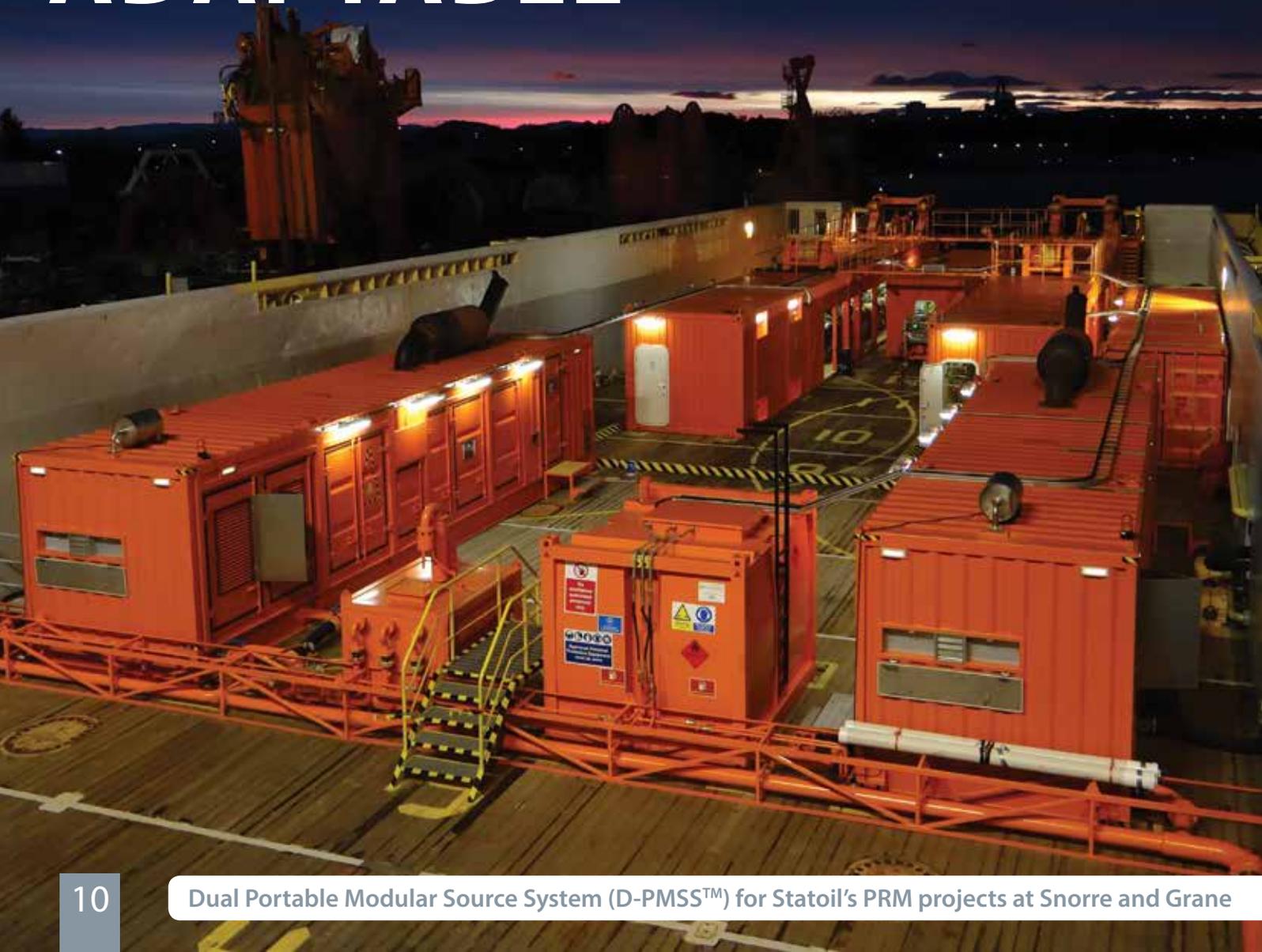
A high resolution 3D service using the P-Cable 3D Seismic system is now available to both the industry and research institutions.

The benefits of P-Cable's new technology includes the ability to produce low cost high-resolution 3D seismic data with rapid deployment and retrieval from small vessels, as well as high production rates and the ability to acquire data in shallow waters.

WGP believes that their capabilities provide an attractive offering for oil and gas exploration and production companies operating on the continental shelf throughout the North Sea and further afield.

-
- State of the art **P-Cable 3D Seismic System** manufactured by Geometrics Inc.
 - The smallest diameter solid streamer available, the GeoEel Solid™
 - Onboard QC processing and brute stack data
 - Meets industry standard for Hi-Res data acquisition

SUCCESS COMES FROM BEING ADAPTABLE



Portable Modular Source

The benefit of the Portable Modular Source System, (PMSS™) is its portability and adaptability. The system is designed to be both land and sea transportable for mobilisation worldwide, and comprises modular units based on ISO sized containers.

It can be quickly installed temporarily on a *vessel of opportunity*, such as a Platform Supply Vessel, rendering it suitable for use as a multiple application Source Vessel. In instances such as reservoir monitoring, this vessel can be provided by the oil company client by utilising an asset already assigned to the operating field with an experienced crew.

WGP's containerised seismic source solutions have evolved in parallel with the developing Permanent Reservoir Monitoring (PRM), also known as Life of Field Seismic (LoFS), market.

Modular Source Applications:

- Reservoir Monitoring / 4D Surveys
- Wide / Multi-Azimuth Surveys
- Undershoot Operations
- 3D VSP's
- Pilot Studies

OVERCOMING ENVIRONMENTAL AND GEOPHYSICAL CHALLENGES



Seabed Seismic

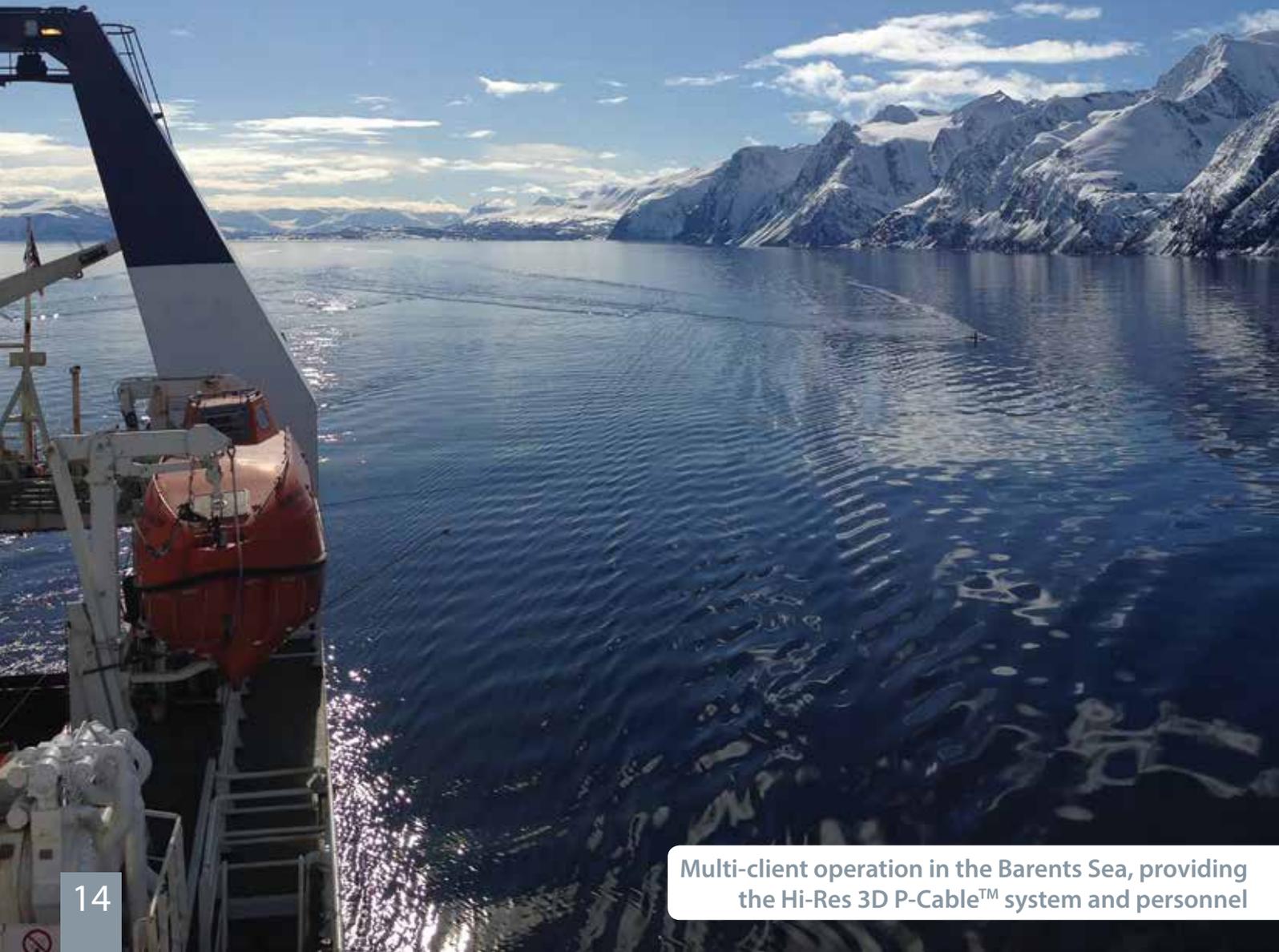
Realise the benefits of Seabed Seismic compared to conventional towed streamer in your exploration and reservoir management goals.

WGP can supply full service Seabed Seismic, including a seismic source system and either, or a combination of, Ocean Bottom Cable and autonomous Ocean Bottom Nodes.

During its operation, WGP achieved the highest production efficiency for OBC handling and source operations for the Chirag Azeri Reservoir Seismic Project (CARSP). It was also one of the world's largest re-deployable 4D/4C OBC projects.

-
- Enhanced reservoir imaging
 - All azimuth, all source - receiver offsets
 - Attenuation of free surface multiples
 - Pitch and Roll inclinometers for multi-component orientation
 - Enhanced signal to noise ratios

FROM INCEPTION TO COMPLETION



Multi-client operation in the Barents Sea, providing the Hi-Res 3D P-Cable™ system and personnel

Project Management

WGP has not only achieved an enviable track record in its business activities, but also strengthened a much sought after resource of technical expertise and an in-depth comprehension and adherence to the requirements of the industry.

WGP continues to seek out new *disruptive technologies* that will be a necessary part of the solution mix for the next generation of data acquisition needs.

Typical projects completed in the past include:

- Engaged by an Oceanographic Institute to develop a source handling system to reduce manual handling of airguns
- Design, procurement, installation and commissioning of a survey vessel refurbishment and upgrade
- Consultancy, design and management of a transition zone survey
- Design and testing of airguns to reduce high frequency noise output

Contact WGP today

for proven skill sets that can be used for
interesting and challenging projects...

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info@wgp-group.com



Zero Harm HSSE Ethos | Quality, Responsive Service to our Clients
Shareholder Value Delivered | Personnel Integrity and Professionalism