# SHEARW/ATER<sup>®</sup>

**Clearly Better.** 







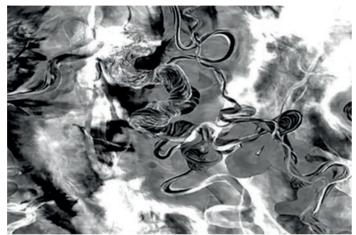
# SHEARW/ATER

# Clearly Better.

Our modern fleet, expert imaging teams and innovative software combine to offer exceptional results. Fast, flexible and cost-effective, Shearwater is the cutting edge geophysical services company.









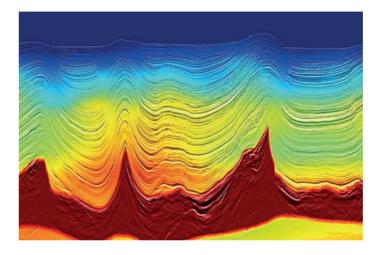
# Marine Acquisition

A powerful fleet, complete with modern technology, manned by experienced crews with advanced Fast Track processing capacity. Work safely and efficiently, in all operating conditions - delivering a cost-effective, high-quality service.



# Processing & Imaging

Agile, responsive teams of experts, available when, where and for however long you need them. Get high-quality data rapidly, reduce costs and build in flexibility at the heart of your project.





# **Reveal Software**

A modern, powerful and intuitive solution for demanding seismic data analysis, Reveal is a full processing software that can scale to run from a laptop in the field through to the largest data center.





Advanced technology, combined with innovative geophysical solutions and premium equipment, ensures you receive quality results on all your data acquisitions.

### We are Shearwater

By implementing a strong working culture our teams understand their expectations. This enables both careers and the company to grow continuously, providing clients with the best quality service.

Shearwater is a new and innovative global provider of 3D marine seismic data, imaging products and data processing software. Our fleet of modern purpose-built vessels leads the industry with their towing capabilities.

Our proprietary seismic processing software, Reveal, has been entirely developed in the 21<sup>st</sup> century and is the most modern, highly interactive, efficient and user-friendly platform for all aspects of processing and imaging on the market.

Together, our acquisition teams, processing geophysicists and R&D group provide our clients with the tools they need to de-risk their exploration and maximise their production efficiency.

"I hold a sincere belief that our employees of today are the foundation of the successes that we look forward to in the future."

Irene Waage Basili, CEO Shearwater GeoServices

#### Culture

We believe in a shared working culture, whereby all our global offices and associated staff promote the same five behaviors; Safe, Inclusive, Respectful, Dynamic and Ambitious.

Our employee engagement program 'focus', built on these five behaviors, provides all employees with the training and understanding of your expectations and Shearwater's responsibilities.



#### With **focus**, we continually

reinforce our culture as the business achieves each stage of our strategy. Our desire is to build an environment in which employees enjoy coming to work.

#### **Our Mission**

- To provide a superior geophysical service
- To add value for all Shearwater stakeholders
- To encourage our staff to grow personally and professionally as experts in their field.

#### **Our Values**

#### Safety

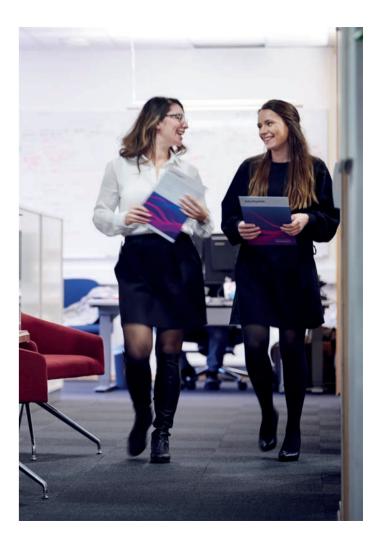
We demand and expect safe behaviors from our employees, contractors and clients and provide safe working environments in which to work. Our commitment to safety is at the core of our company culture and at the forefront of everything we do.

#### Quality

We meet high standards of quality in both what we do and how we deliver it. We take pride in our product and our service excellence.

#### Integrity

We value professional and personal integrity. We achieve our goals by being honest and straight-forward with all of our stakeholders.



# QHSE

Without compromise, we will continue to allocate both human and material resources to ensure our QHSE culture and performance meet your expectations.

Our Industry has always placed an overriding importance on Health and Safety. At Shearwater we acknowledge the duty of care that we hold for the Health and Safety of our employees and contractors.

We demand safe behavior from all of our stakeholders and encourage it as both a personal and a professional value.

**focus** places safety at the forefront of the company's ethos and is a priority factor in every employee's daily routine as well as company appraisal criteria. Shearwaters management system is compliant to the ISM Code and aligned to IOGP guidelines, certified to ISO9001 and compliant with ISO14001 and OHSAS18001 standards.

We have implemented best-in-class Integrated Management System software to actively facilitate and transparently communicate QHSE compliance.

Marine seismic acquisition projects can be exposed to unique and variable hazards depending on where in the world prospects are located. Shearwater promotes the use of proactive, leading indicators. These have been specifically configured to provide our employees with the tools required to identify and manage potential hazards. They also reflect the level of QHSE effort from the workforce. Calculation and publication of such indicators can be used, for example, to actively monitor trends in the safety culture of each crew over the duration of a project, or between two vessels.

Continually improving upon the performance of these indicators drives our ongoing effort towards our goal of zero loss, zero harm and zero rework. Shearwater's Employees and Assets are well proven. We are ideally placed to understand your concerns, meet your expectations and to deliver safe, efficient projects.

Shearwater is a Governing Member of IAGC.

For more information on Shearwater's commitment to employee development and QHSE visit: shearwatergeo.com





# SHEARWATER

# Marine Acquisition

A powerful fleet, complete with modern technology, manned by experienced crews with advanced Fast Track processing capacity.

Work safely and efficiently, in all operating conditions - delivering a cost-effective, high-quality service.

# Marine Acquisition

The combination of a modern fleet, advanced technologies and experienced crews makes Shearwater the reliable choice for marine acquisition.



# Safety

Hands-on risk management and our strong safety culture guarantees high performance acquisition even in the most challenging conditions.



# Capability

We have a strong track record of working safely, efficiently, and responsibly in the most challenging exploration provinces around the globe.



## Flexibility

Modern vessels, combined with experienced staff enable us to provide flexible high volume surveys all from the same acquisition platform.



#### Technologies

The world's most advanced marine seismic acquisition technologies for exploration, reservoir delineation, characterization, and monitoring.



# Techniques

Shearwater offers the widest range of acquisition techniques to provide the level of subsurface illumination and image fidelity you need to make informed decisions about your reservoir.





#### The Fleet

Shearwater owns the industry's leading fleet of eleven powerful high capacity seismic vessels, 3 multipurpose vessels (combined ocean bottom, towed streamer, source vessels), and dedicated source vessels.

# The Fleet

Shearwater owns the industry's leading fleet of eleven powerful high capacity seismic vessels, 3 multipurpose vessels (combined ocean bottom, towed streamer, source vessels), and dedicated source vessels.

This gives us the flexibility to accommodate the demands of exploration and development projects, from large-scale regional 3D surveys to focused 4D production monitoring. Combining some of the world's most innovative and efficient vessels with the most advanced acquisition systems, provides the ability to deploy the optimal acquisition configuration to meet the requirements of every survey design and technique. This ensures exceptional results in even the toughest environments.

The three multipurpose and two source vessels are equipped to acquire surveys combining towed streamer with ocean bottom systems. In addition the source vessels can be used for under-shooting, rich-azimuth surveys and VSP projects.

### High Capacity 3D Streamer Vessels

Shearwater's fleet of purpose built seismic vessels designed for safe and efficient seismic acquisition using towed streamers, ocean bottom nodes (OBN) and ocean bottom cables (OBC). Combined with our onboard and onshore data processing expertise we deliver industry leading quality products.



Amazon Warrior



Amazon Conqueror



Polar Empress



Polar Marquis



Polar Duke



SW Amundsen







SW Magellan





SW Columbus



SW Eagle



Trident

## Multipurpose Vessels

## Source Vessels



SW Vespucci



SW Cook



SW Tasman

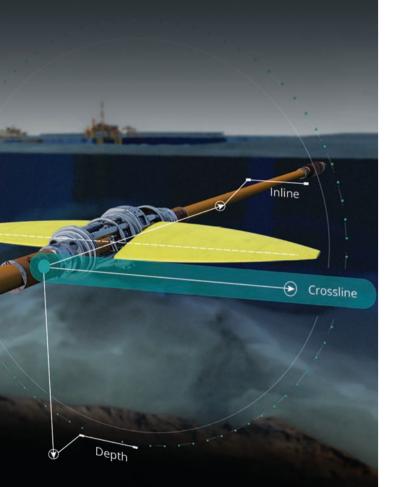


SW Diamond



SW Emerald





# Technologies

The world's most advanced marine seismic acquisition technologies for exploration, reservoir delineation, characterization, and monitoring.

Shearwater's range of leading streamer technologies is the result of extensive research and engineering over many decades. Providing the best data quality and operational performance in the industry, the *Qmarine* and *Isometrix* systems have set new standards in seismic acquisition.

Ocean bottom seismic (OBS) acquisition, with either nodal technology or the established *Qseabed* system, delivers the highest-quality multicomponent data in the most efficient and cost-effective manner possible.

Our eSource bandwidth-controlled seismic source technology preserves the low-frequency energy required for seismic exploration, while suppressing unwanted high-frequency energy.

## Techniques

Innovative techniques for a custom marine acquisition solution.

Regardless of the complexity and requirements of your marine seismic challenge, Shearwater offers the widest range of acquisition techniques, including broadband, Coil, FAZ, WAZ, Seabed (node and cable), to provide the level of subsurface illumination and image fidelity you need to make informed decisions about your reservoir.

Speak with our experienced teams to discuss your Marine Acquisition requirements, contact: sales@shearwatergeo.com





# SHEARWATER

# Processing & Imaging

Agile, responsive teams of experts, available when, where and for however long you need them. Get high-quality data rapidly, reduce costs and build in flexibility at the heart of your project.

# Processing & Imaging

Our Reveal processing software and imaging experts provide a truly integrated service, together with our flexible approach we deliver solutions to meet all your challenges.



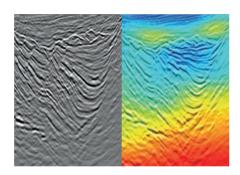
#### In-house R&D

Our in-house R&D department delivers industry leading technology implementing innovative proprietary algorithms in the Reveal software platform.



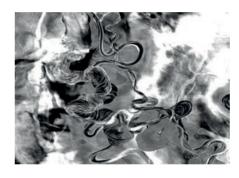
#### Agile Responsive Teams

Shearwater provide agile teams that can work from existing processing centers, from dedicated 'pop-up' processing centers, so our teams can be close to your project.



# Capability

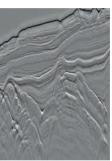
Our onboard and office based processing capabilities provide you with the expertise and service to achieve the highest quality seismic imaging.



#### Cost Efficient

Our business model and experienced teams allow us to keep your costs low, whilst maintaining delivery of superior quality data. Our expert Geophysicists will reprocess your data using Shearwater's advanced technology - producing clearly better results.





# Superior Quality Processing



### Powered by Reveal

Reveal software gives Shearwater a strong differentiator in the P&I market. By designing and building our own software it allows our Geophysicists to apply technology knowledgeably, intuitively and interactively.

# Our Processing Teams

Powered by Reveal software, our in-house R&D team delivers industry-leading technology such as **SHarp**sig deghosting, **Flexi**source deblending, Reverse Time Migration (RTM) and 3D Full Waveform Inversion (FWI).

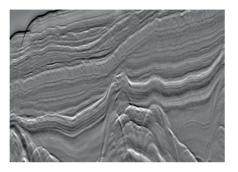
At Shearwater we process your land and marine seismic data by combining the latest processing software with experienced Geophysicists and efficient hardware.

Through the implementation of Shearwater Reveal we have the capability and proven experience to offer:

- Acquisition QC & technical supervision on vessels and client offices
- Local Geophysicist resource with a license of Reveal within client's offices to work directly with asset team
- Set-up of a local center or processing hub for projects that require in-country operations for QC or full processing
- Joint R&D collaboration projects
- Software and training tailored to client's requirements

This flexibility benefits each project. By giving clients rapid access to data, speeding up the QC process, reducing the timing between receipt of data and the delivery of the final data, we maximize the value of the seismic results.

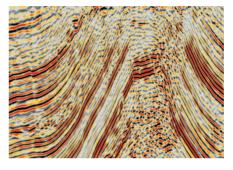
# Our Technology



#### SHarp Broadband

**SHarp** technology provides increased bandwidth from data recorded with legacy, conventional or broadband acquisition.

**SHarp**sig technology allows improved debubble and AVO using the near field hydrophones to compute accurate shot-byshot directional source de-signature filters.



#### Land Processing

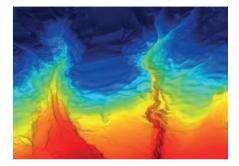
Shearwater's land processing includes the latest techniques to increase your data quality. Tools including; 3D Radon, Offset Vector Tiling, 3D fkxky, Tau-pxpy denoise, 5D regularization, Time and Depth Migration, plus many more.

### Time Processing

Our range of imaging techniques can be used to enhance your data; Shot-by-shot designature using NFH, True Azimuth 3D SRME, 3D SWME, IME, Anisotropic PSTM, and more.







## Depth Imaging

Depth Imaging capabilities deliver exceptional data results using; VTI/TTI/TOR Anisotropy, non-parametric tomography, Kirchhoff, Beam, RTM and FWI.

Discuss your processing requirements with our team: sales@shearwatergeo.com





A modern, powerful and intuitive solution for demanding seismic data analysis, Reveal is a full processing software that can scale to run from a laptop in the field through to the largest data center.

# Unique Seismic Processing

Reveal focuses on the user experience to effectively leverage geophysics in seismic processing.



#### Modern

Reveal is an intuitive software providing land, marine, time and depth processing in a modern, single user-friendly interface.



#### Flexible

This full processing software provides a flexible and interactive geophysical platform with an open development environment.

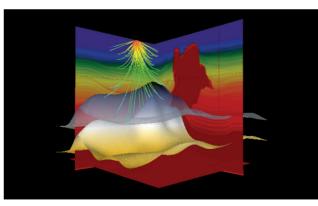


#### Software for Everyone

Reveal is used internally by Shearwater and is also licensed to oil companies, contractors, consultants and academics world-wide.



#### Real Time Quality Control



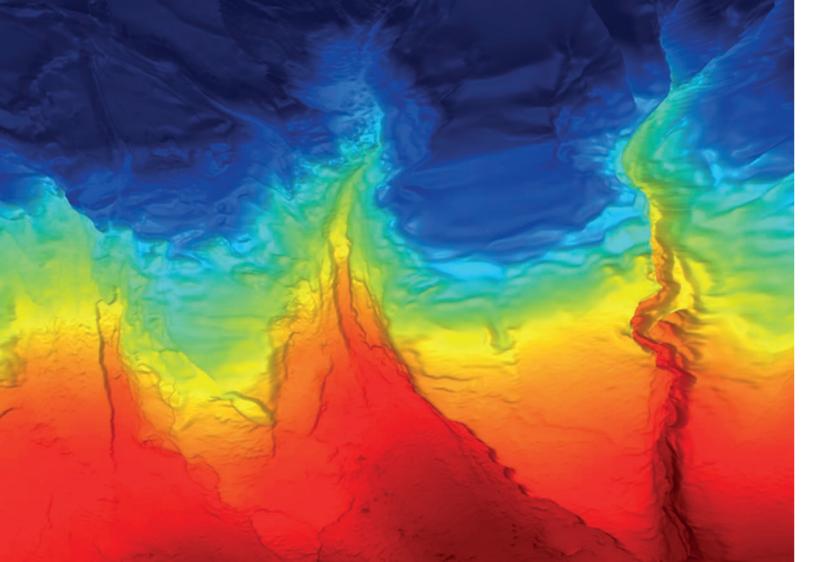
#### Depth Imaging

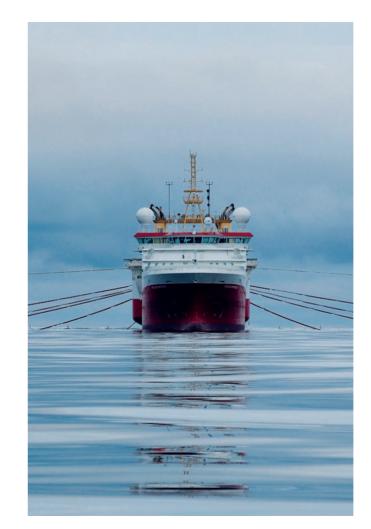


# Time Processing



Developers' Environment







# A Platform That's Easy To Use

Reveal performs time & depth processing and imaging of land & marine seismic data within a single user interface.

The flexibility of Reveal's full processing platform, and its ability to run in data centers or directly in the field, ensures your projects are completed within efficient time-frames. With its advanced batch job management, parallel processing and cluster scalability, geophysicists can achieve rapid turnarounds.

Data can be read directly from field tapes, SEGYs and other formats. You can create PowerPoint slides directly from the viewer for your presentations and reports. With processing history attached to every seismic file you will remain in full control every step of the way from start to finish.

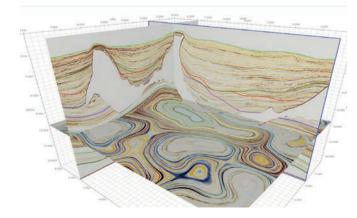
Reveal also provides a developers' environment for customers keen to integrate it with their own software, workflows and processing systems.

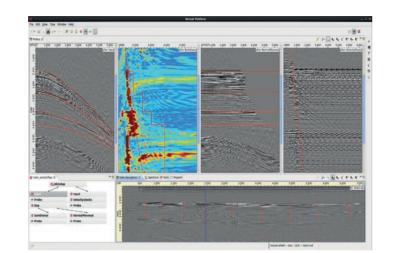
# **Reveal Your Algorithms**

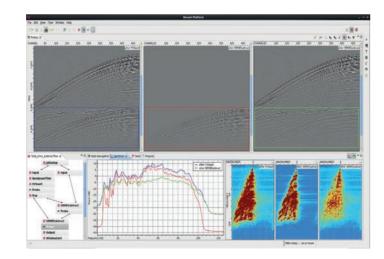
Reveal provides APIs for you to bring your own codes and geophysics into the Reveal interface.

The developer's API can quickly leverage Python directly in your flows. The C++, Java or Fortran APIs can expand to cluster-scales with OpenMP and MPI, increasing your code's capabilities within Reveal.

Our R&D team can help expedite porting code to reveal. This gives the tools a new and interactive life while we use our experience to modernize legacy codes for parallel architectures.







# Customer Benefits: All Reveal Users



Remote Support

Easy to use ticketing system and phone access to dedicated geophysicists.



#### **On-Site Training & Support**

Our team can customize training and support to your needs in your office or in the field, worldwide.



#### In-House R&D Team

Continuous and rapid development of leading edge geophysics to the Reveal platform.





#### Annual UGM

Automatically invited to annual User-Group Meetings hosted in both Houston, USA and London, UK.



#### Newsletters

The latest news and update information direct to your inbox.



#### **Online Portal**

Access to the online Customer Zone, via shearwatergeo.com, containing software updates, latest developers build, supporting documents and software archives.



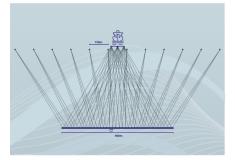
# SHEARWATER

# Technology

Advanced technology, combined with innovative geophysical solutions and premium equipment, ensures you receive quality results on all your data acquisitions.

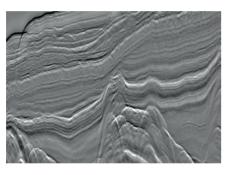
# Technology

Shearwater combines technology, innovation and collaboration at every step from sensor design to final image. Our Research, Engineering and Manufacturing teams have decades of experience generating industry game-changing technologies, such as **Q***marine*, **Q***seabed*, and **Iso***metrix*.



#### Marine Acquisition Technology

The world's most advanced marine seismic acquisition technologies for exploration, reservoir delineation, characterization, and monitoring.



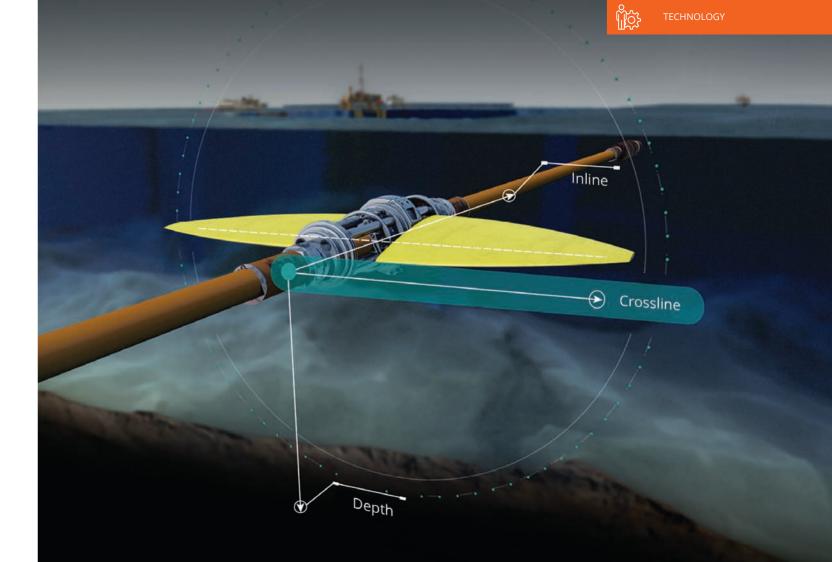
# Processing & Imaging Technology

Onboard and onshore processing teams provide you with the expertise and service to achieve the highest quality imaging in all geological environments.



# Research & Development

In-house R&D team continuously develop new, industry-leading algorithms to provide innovative ways to improve the image quality we deliver.



# Shearwater Offices



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