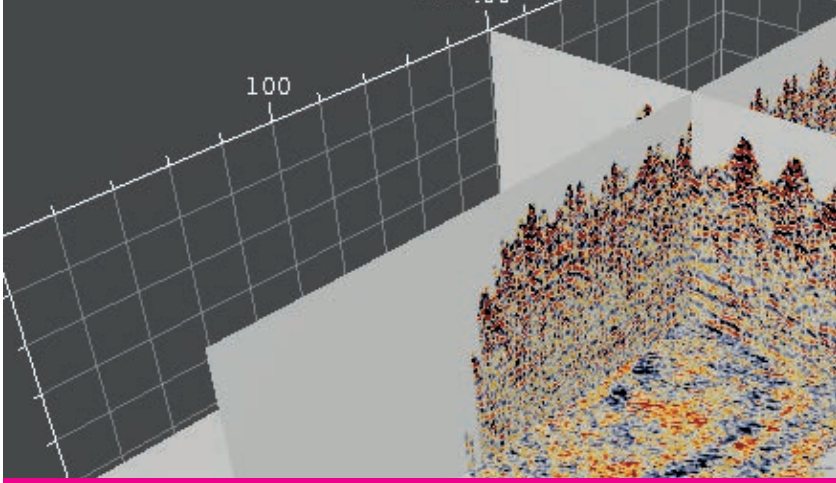
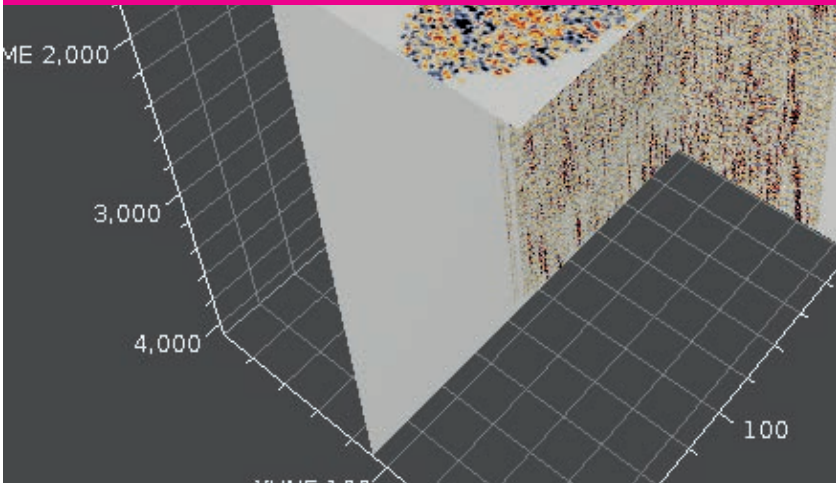
SHEARWATER

Clearly Better.



Reveal Software



Revealing possibilities
shearwatergeo.com

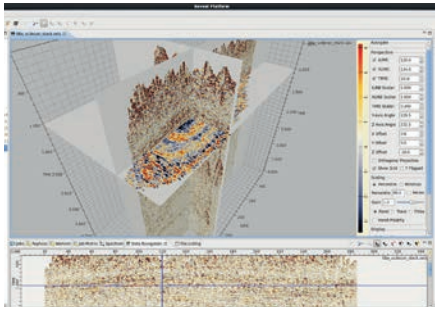
SHEARWATER REVEAL

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 centre.

Reveal Software

Shearwater Reveal provides a unique, interactive processing platform with real time feedback for picks and parameter selection. This greater interactivity leads to faster and more accurate decision-making.



Modern

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

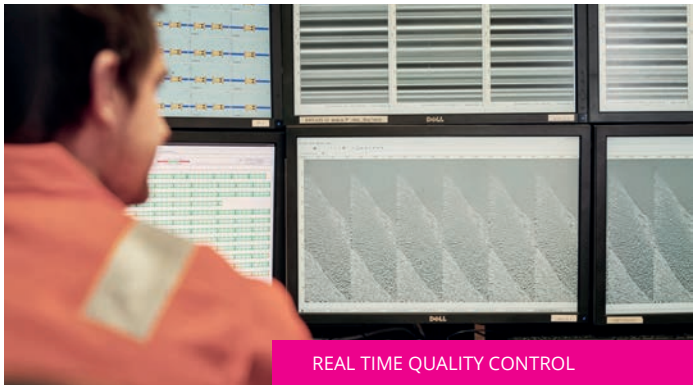
Flexible

This full processing software provides an interactive geophysical platform with an open development environment able to run in the field on laptops and in the largest data centers.

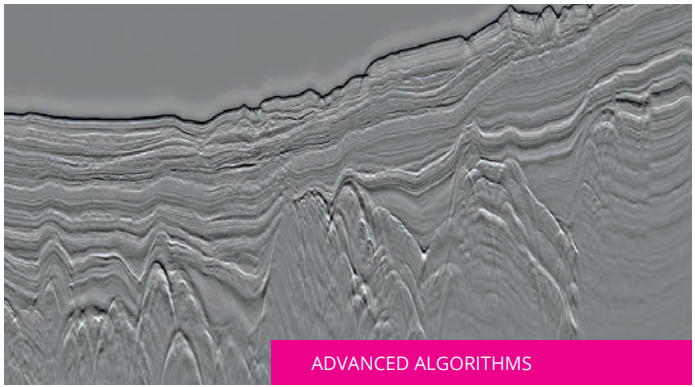
Software for Everyone

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

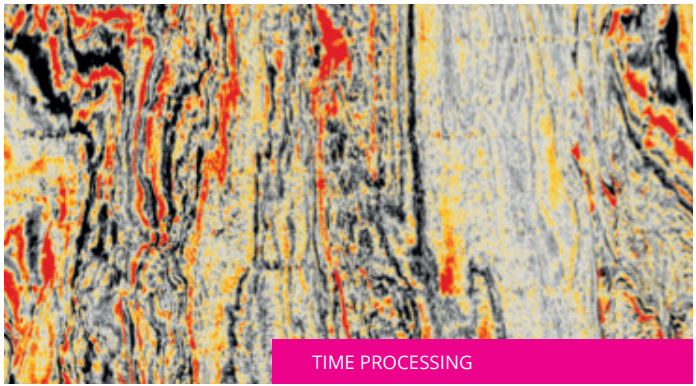
A Seamless Interface



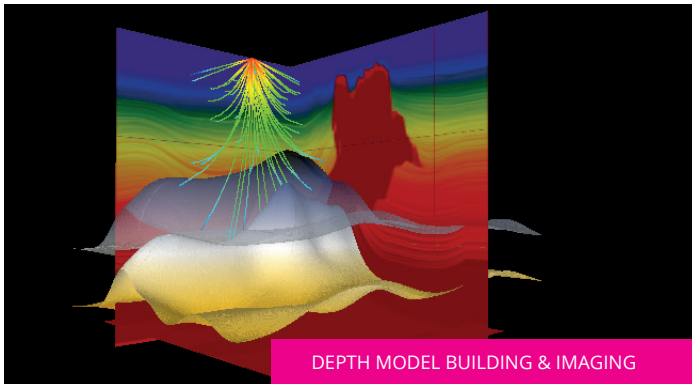
REAL TIME QUALITY CONTROL



ADVANCED ALGORITHMS



TIME PROCESSING



DEPTH MODEL BUILDING & IMAGING

Processing Capabilities

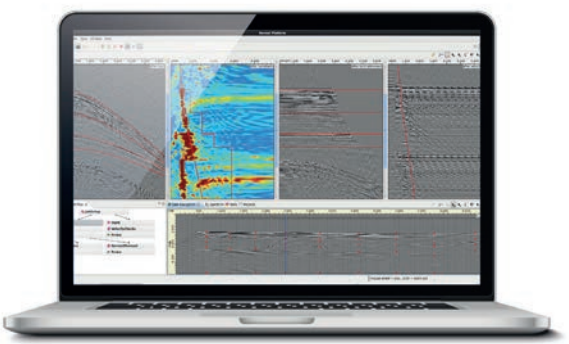
Our software performs time and depth processing and imaging for both land and marine environments from within a single user interface.

Reveal stands alone in the industry as the only seismic processing software product designed and built entirely in the 21st Century.

Our R&D teams' capability ensures continuous development of Shearwater Reveal. This benefits the software's use on a variety of projects allowing the team to rapidly deploy new functionality and respond to customer requests.

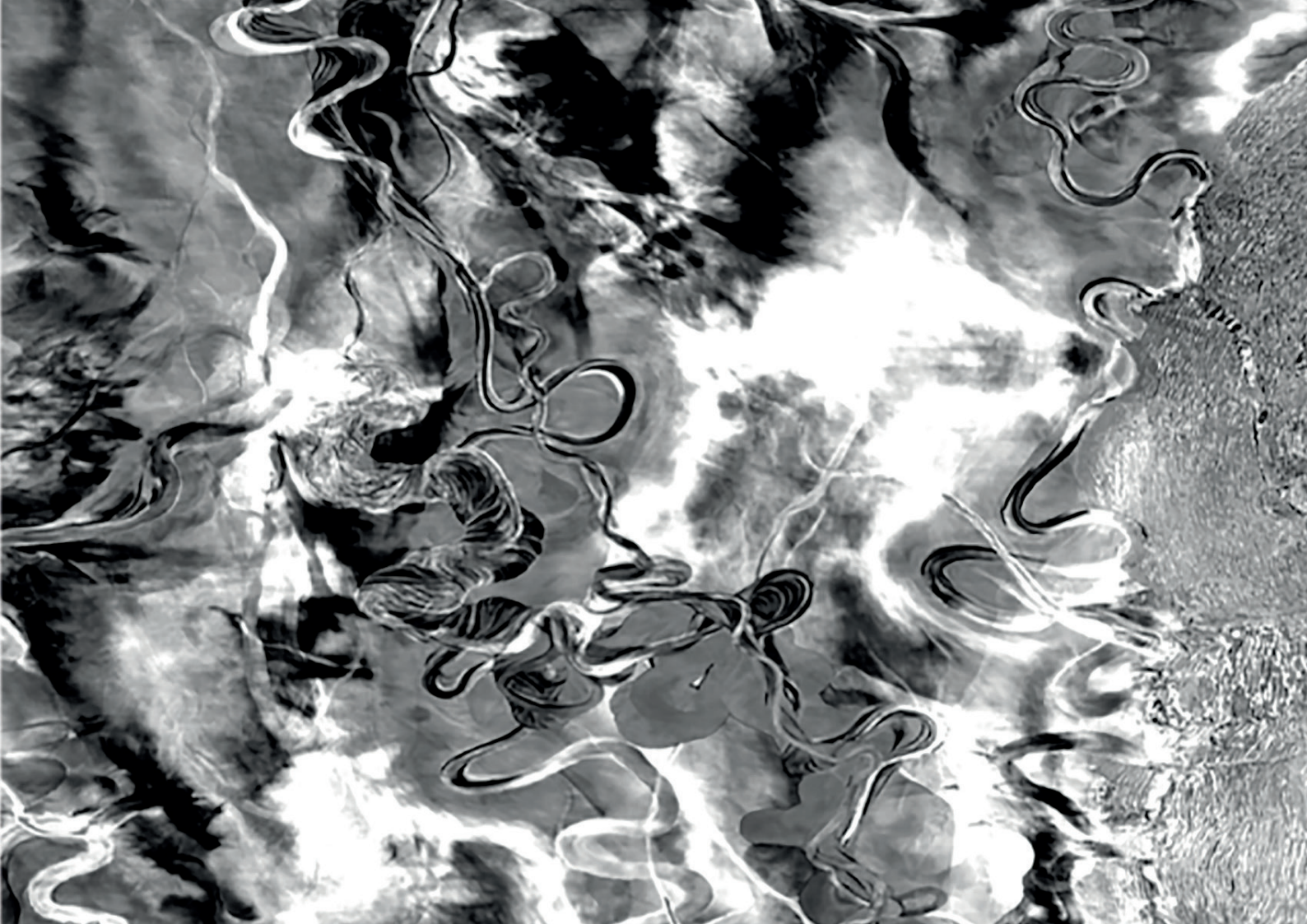
With its advanced batch job management, parallel processing and cluster scalability, geophysicists can achieve highly efficient turnarounds with this easy to use software.

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



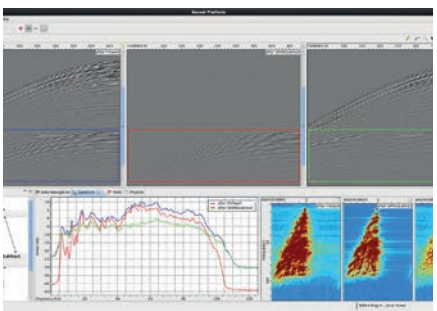
Licensed to oil and gas companies, contractors, consultants and academia.

Start your 30-Day free trial today, visit:
shearwatergeo.com



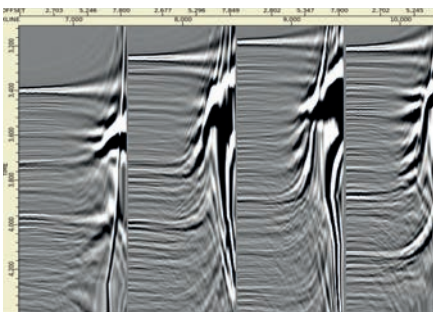
Modern Software

Processing results are displayed in real time to give you a better understanding of how the data is being affected, allowing for more informed decisions. Reveal also features a fast 2D and 3D rendering engine, which can easily compare views and crossplot header values.



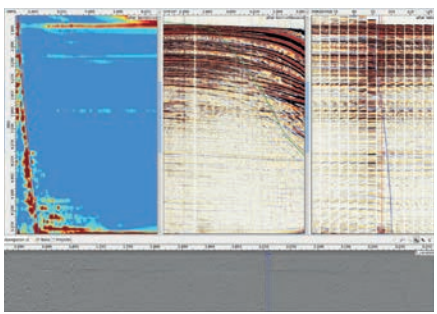
Interactive Job Builder

- Interactive job flow builder
- Build flows instantly while visualizing data
- Job management and parallel processing
- Seamlessly incorporate proprietary modules and technology



Real Time Processing

- Change parameters in your processing flow and see your data update in Real Time
- Operate on actual flows; new picks, modules, sorts are all applied in Real Time

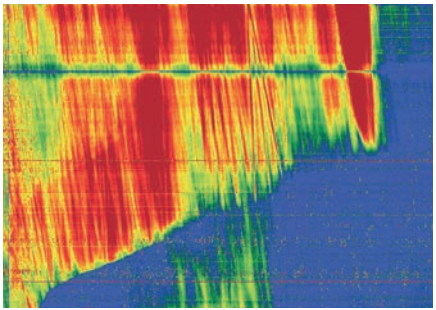


Velocity Analysis

- Full real time configurability
- Machine learning velocity picking
- Live navigation for 2D, 3D & multi-line 2D
- Multi-user
- Velocity line tie analysis

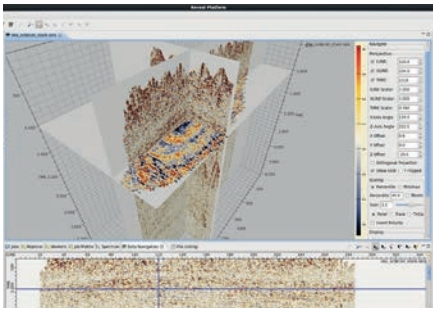
Flexible Processing

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



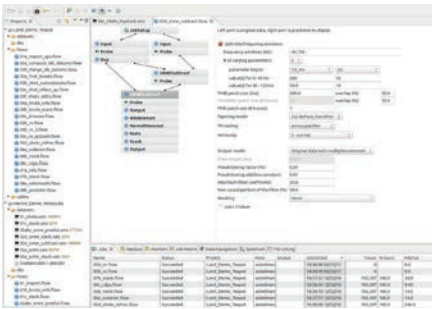
Crossplot Visualization

- Plot any header in the crossplot view
- Quick navigation through datasets
- Geometry QC
- Flexible amplitude plots
- Live "hover" plots
- Support for billions of traces



2D/3D Data Visualization

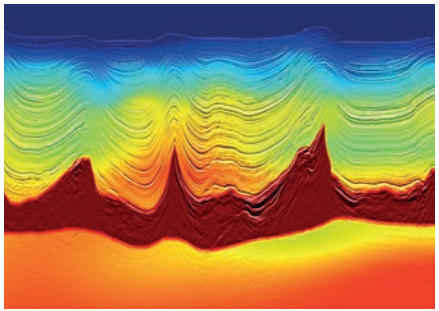
- Inline, crossline and time slices
- Linked, synchronized views
- Velocity field overlays
- Horizons (3D and 2D intersection views)
- 3D Geobodies



Start to finish

- Read directly from field tapes, SEGYs, or other supported formats
- Process remotely on wifi at 40,000 ft
- Create PPTs directly from the viewer
- Processing history attached to every seismic file
- SEGY header mappings for export

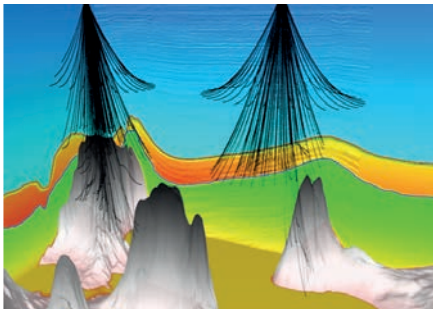
Depth Processing in Reveal



Shearwater Reveal is a land and marine seismic processing software designed and developed to solve QC, time and depth processing challenges.

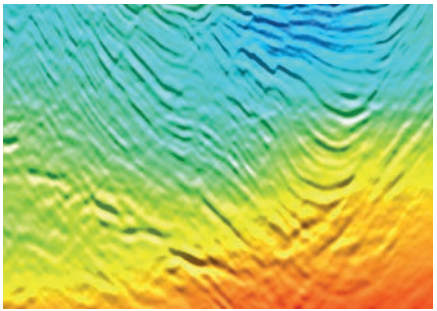
Our depth processing tools offer five packages: Kirchhoff Depth, RTM, Model Building, Tomography and FWI.

With our Model Building package you can tie velocity models to wells, build salt bodies and iterate to your satisfaction without having to change software.



Model Building

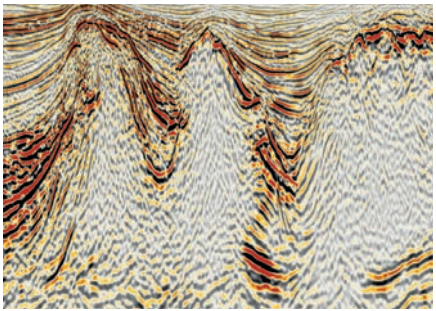
Optimize your Model Building with Shearwater's Depth Packages. Capabilities include manipulation with Horizons and visualization using Geobodies. Reveal clearly produces superior results in your unexplored areas.



Kirchhoff Depth

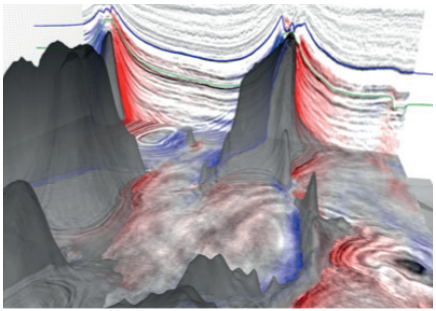
Pre-Stack Kirchhoff Depth Migration is a highly versatile algorithm that can be used throughout your Model Building. Migrate from topography, correct for amplitude, phase and attenuation all within the migration.

Created as a complete processing toolkit, Reveal can take your data from field tapes through time processing and depth imaging.



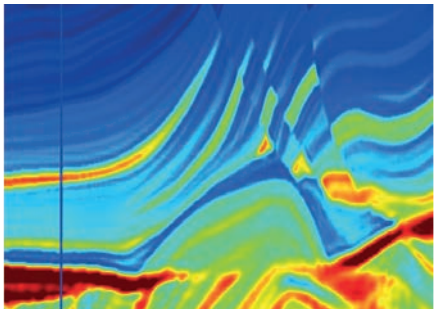
Reverse Time Migration

RTM can run on CPUs and GPUs for imaging challenging pre-salt basins. Perform illumination studies, create angle gathers, filter RTM artifacts, and model wavefields. Reveal also provides a RTM runtime calculator to estimate compute needs.



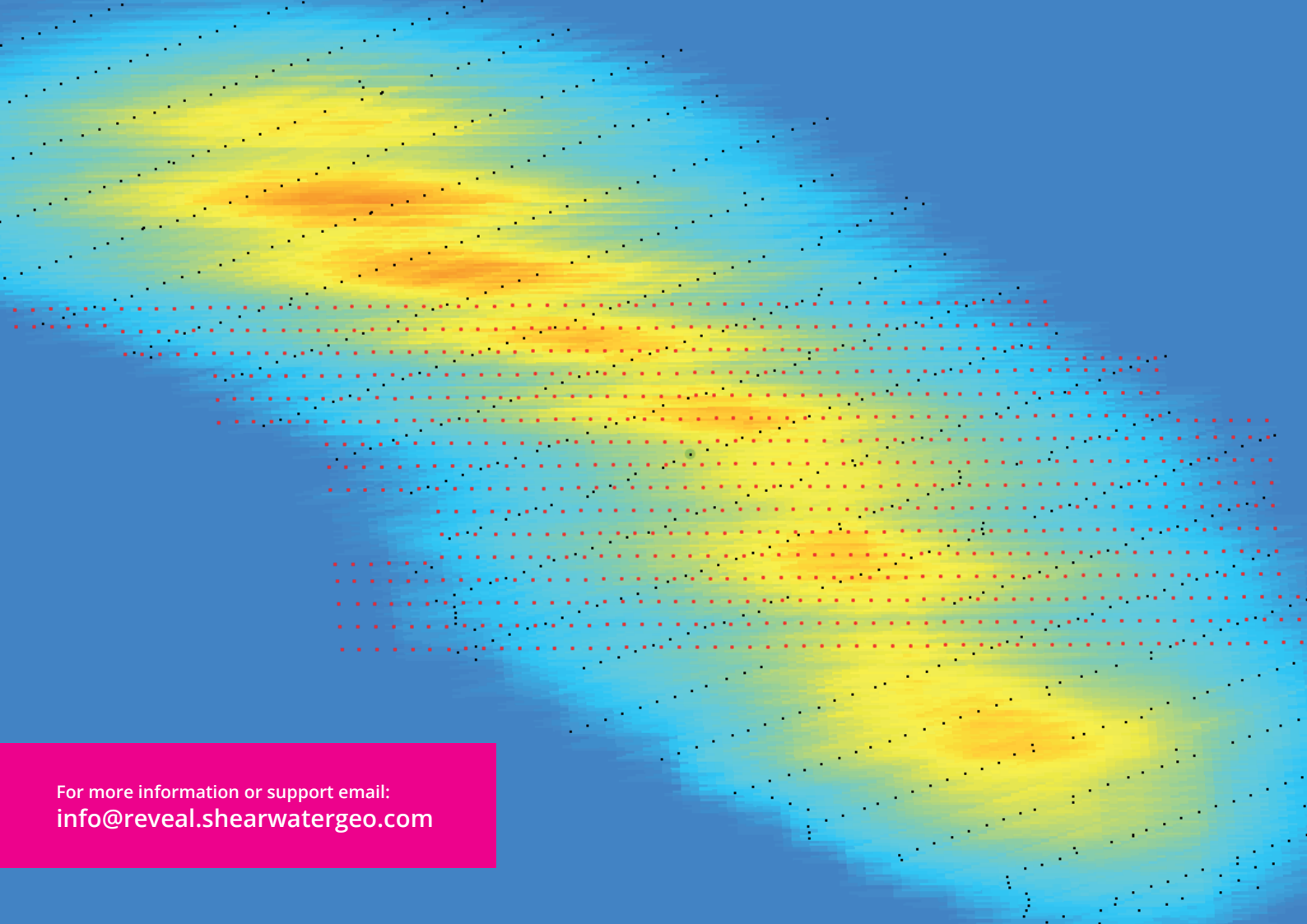
Tomography

Reveal provides grid based reflection tomography with automatic and interactive picking methods. Dip attributes can be automatically estimated and included in Tomography. Reveal also provides the ability to estimate anisotropic parameters and Q.



Full Waveform Inversion

Reveal enables easy incorporation of inversion into larger Model Building work flows, leading to a much greater resolution. FWI is capable of isotropic and isotropic inversion modeling.



For more information or support email:
info@reveal.shearwatergeo.com

Key Processing Tools: Reveal Base Package

Input/Output	Read data from SEG-D, SEG-Y, seis, SeisSpace®, ProMAX®, SEPLib/Madagascar, SeismicUnix, SEG-B, ASCII Write data in SEG-Y, seis, SeismicUnix, seplib	**Multiple Attenuation**	High-resolution Radon Demultiple, 2D SRME, Tau-P Deconvolution, Wave Equation Demultiple, Adaptive Subtraction
Geometry	P190 Import, DB Merge/Setup, Header Setup, SPS Import, P1, UTM2LatLong	**Regularization & Interpolation**	FX Interpolation, PostStack Regridding, Sinc Interpolation, 2D offset regularization
Amplitudes	SCAmps, Spherical Divergence, Time Varying Scaling, AGC, GateDecon, Gate Amplitude, Survey Match	**Velocity Tools**	Dix Conversion, Semblance Picking, Eta Semblance, LMO, NMO, Residual Moveout, Residual Semblance Spectra, Velocity Muting, Constant and Percentage Velocity Stacks, DBInterp
Statics	Elevation Statics, Residual Statics, Refraction Statics, First Break AutoPicking with Machine Learning Refractor Picking, Static Shift, Trim Statics, Datum Statics	**Time Imaging**	Kirchhoff Post- & Pre-Stack Anisotropic Migration, Post-Stack Wave Equation Migration & Demigration, DMO
Spectral Shaping	Designature, Minimum/Zero Phase Conversion, Spectral Balancing/Whitening, Q Compensation (Phase & Amplitude), Offset Spectral Balancing	**Parallel Processing**	Job replication, MPI-based parallel processing, OpenMP-based parallel processing, Queuing Systems: Torque, LSF, PBS Pro, Slurm, Moab, Maui, SGE
Noise Attenuation	Swell Noise, Linear Noise, FK Filtering, Bandpass Filtering, Time Varying Filtering, TX and FX Deconvolution, Airblast Denoise, Noise Adaptive Filtering, Radial Filter	**Developer's Environment**	Open API; Example code for C++, Java, F90, Python. Interactive programming with Python modules

Shearwater Reveal: Advanced Packages

Capabilities	Module	Real Time QC	Marine	Land
Offshore Real-Time QC	Offshore Real-Time flows Real-Time dashboard TapeLabel SEGDTapeVerify	✓		
De-ghosting	Deghost2D TVDeghost		✓	
Shallow Water Demultiple	SWMEdesign SWMEapply		✓	
3D SRME	SRMEPredict3D - Shallow water and Peglegs		✓	
Demultiple	HiRes 3D Radon IME Predict		✓	✓
5D Interp – General	ComputePatches FourierRegularize FourierRegularizeND PatchInTime		✓	✓
FXY Deconvolution	FXYDecon		✓	✓
AVO Velocity Autopicking	AVOVelUpdate RVIVelUpdate AVOVelocityPicking		✓	✓
Azimuthal Velocities	AzimSemb AzimVel		✓	✓
Machine Learning	SmartVel Picker ETA ML Picking		✓	✓
Land Processing	ShotRelocate Ground roll predict			✓
5D Interp – Land Specific	OVTHeaders - Offset vector tiles Creates5Dtraces - Spiral bins Reg 5D Headers			✓
Multi-Component	MCProcessing MCSetup PSBinning MCRotate Hodograms			✓

Reveal Depth Processing: Advanced Packages

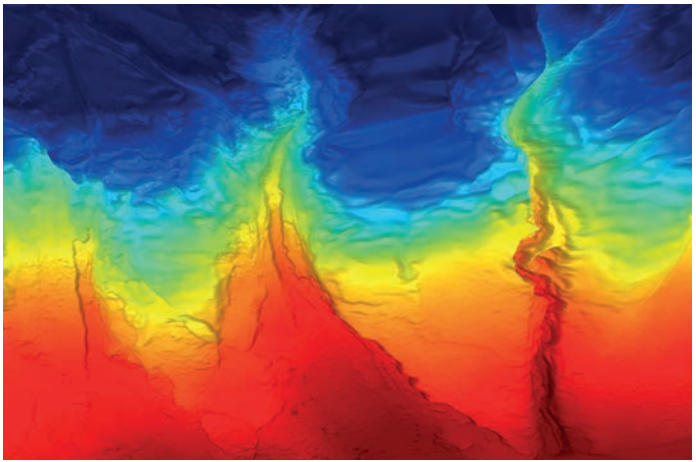
Capabilities	Module	Kirchhoff Depth	Model Building	Tomography	RTM	FWI
Kirchhoff PSDM	PreStackDepth TTRayTrace TTEikonal TTExtract	✓				
Model Manipulation	HorizonFill HorizonMix GeobodyFill		✓			
Model Visualization	Geobodies		✓			
Model Building Utilities	HeaderTime2Depth Anisoscan TTIlluminate HeaderMapMigration		✓			
Well Logs	LASImport WellEdit Well2Trace/Trace2Well QC visualization of log curves		✓			
Tomography	Tomography TomoPicker TomoPickerClean			✓		
Reverse Time Migration	RTM RTMFilter RTMModeling RTMPlan RTMVarGrid				✓	
Full Waveform Inversion	FWI 2D & 3D					✓

SHEARWATER

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.

SHEARWATER

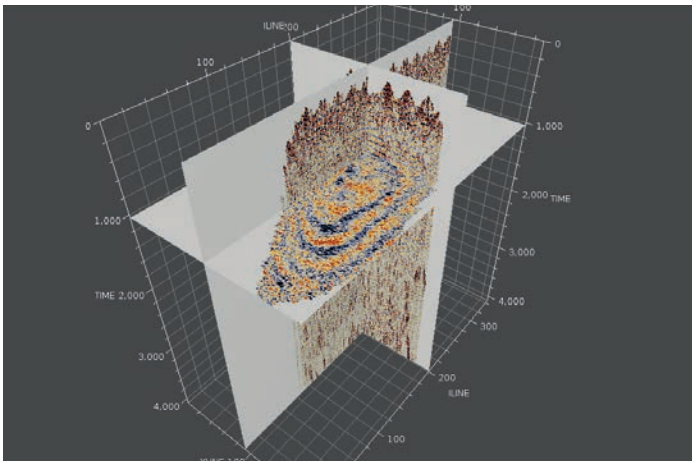


Marine Acquisition

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.

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

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Multi-Client

Our full service Multi-Client business offers refreshing flexibility and clarity. Reduce financial exposure and maximize your exploration returns.

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