Walter Kessinger

Home Address: 33 East Trillium Circle
The Woodlands, Texas 77381

Email: Walter@Kessinger.com
Phone: 713-828-0367

Summary: Geophysicist specializing in upstream oil & gas industry application of seismic technologies

Professional Experience:

2019 – Present APEX Petroleum Engineering, Vice President Seismic Imaging

I perform seismic processing, analysis and depth modeling in support of geostatistical modeling, inversion, drilling hazard and geopressure projects.

2011 – 2018 SIGMA^3 Integrated Reservoir Solutions, Vice President Seismic Imaging

I managed the seismic processing and depth imaging group, and I worked with a group conducting seismic reservoir characterization projects. I also occasionally provided support for the VSP imaging and microseismic processing groups.

2004 – 2011 Fusion Petroleum Technologies, Vice President Seismic Imaging

I conducted and managed service projects for major, national, and independent exploration companies. These projects included seismic processing, depth imaging, geopressure prediction, hazard studies, and AVO/DHI analysis.

2002 – 2004 Geotrace Technologies / Ensign Geosciences, Senior Research Geophysicist

I was responsible for depth migration workflow design, processing, quality control, salt interpretation, proposal writing, and marketing. In establishing a successful depth imaging program, I divided my time between operations and marketing. I also worked with the R&D group to help develop and commercialize new technologies.

2000 – 2001 Paradigm Geophysical, Senior Geophysicist

1994 – 1999 Houston Advanced Research Center, Research Scientist
1990 – 1993 Houston Advanced Research Center, Research Associate

I coordinated the 3-D Imaging Project, an industry sponsored consortium that combined imaging research and software development. In the course of twenty consortium workshops, I presented case histories on topics including imaging of subsalt and complex structures, velocity model building, new migration algorithms, AVO attribute extraction, seismic modeling and inversion, converted mode interpretation, and seismic visualization. I compiled and edited semiannual reports describing all research within our group.

I also conducted poststack and prestack 3-D depth migration projects for subsalt imaging for a variety of clients including Anadarko, BHP, BP, Elf, JNOC, Marathon, Pemex, Shell, Texaco, Total, and Unocal.

1984	John E. Chance and Associates, Summer Internship
	I transcribed data from seismic surveys, magnetometer surveys, and side scan sonar surveys for the purpose of hazard evaluations.

Professional Affiliations and Other Professional Experience:

Registered professional geoscientist with the State of Texas, license number 6192

Active member of Society of Exploration Geophysicists, American Association of Petroleum Geologists, European Association of Geoscientists & Engineers, American Geophysical Union, Geophysical Society of Houston, and Houston Geological Society

Geophysical Society of Houston secretary, 2011-2012

Education and Academic History:

Twelve hours graduate credit studying inverse wave scattering theory with Prof. Arthur Weglein, University of Houston, 2000 to 2001

Adjunct Assistant Professor of Geosciences, University of Houston, April 1999 to August 2000

Master of Arts in geophysics, University of Texas at Austin, May 1991. Thesis: "Three Dimensional Seismic Imaging of the Costa Rica Accretionary Margin"

Received University of Texas Institute for Geophysics industrial fellowship for the scholastic year 1986 to 1987

Bachelor of Science in physics with a minor in geology, Louisiana State University, Baton Rouge, 1986

Academic Research Work:

1999 – 2000	Research Scientist; Task leader for a DOE / industry subsalt modeling and imaging project; Rice University Dept. of Geology and Geophysics
1987 – 1990	Research Assistant; Seismic data processor and software programmer in support of various academic research projects, and participant in offshore acquisition programs; University of Texas Institute for Geophysics
1984 – 1986	Research Assistant; Interpreted and mapped high resolution seismic data; Louisiana Geological Survey Coastal Program, Louisiana State University

Publications and Presentations:

"Integrated reflection seismic monitoring and reservoir modeling for geologic CO_2 sequestration," Raul Cabrera, Alan R. Huffman, John D. Rogers, Alberto Villarreal, Jeff Meyer, Walter Kessinger, Todd Hibbitts and Freddy Obregon, Fall 2012 International SEG Meeting in Las Vegas.

"Pore Pressure Prediction in Complex Carbonate Environments Using Seismic Inversion Methods," Alan Huffman, Jeffery Meyer, Walter Kessinger and Freddy Obregon, at GeoPressure 2011, Galveston, Texas, October 5, 2011.

"Geopressure Prediction in Ultradeep Wells: When the Reservoir Becomes the Enemy," Alan Huffman, Rick Lahann and Walter Kessinger, presented by Walter Kessinger at the 12th Annual Gulf of Mexico Deepwater Technical Symposium in New Orleans, August 8, 2008.

"Illumination Angle Compensation in Kirchhoff Depth Migration," Walter Kessinger, presented at the Fall 2004 International SEG Meeting in Denver.

"Curved-ray time migration can improve seismic imaging," Walter Kessinger, *Oil & Gas Journal*, October 7, 2002.

"Exploration Geophysics," Manik Talwani and Walter Kessinger, *Encyclopedia of Physical Science and Technology, Third Edition,* 2001, Academic Press.

"Improving Gulf of Mexico Subsurface Images with 3D Grid Tomography, 3D Wave Equation Migration, and Anisotropic Velocity Analysis & Imaging," Walter Kessinger, Exhibition Hall presentation for Paradigm Geophysical, Fall 2001 SEG International Meeting in San Antonio.

Organized meeting of the Geophysical Society of Houston Data Processing Special Interest Group on velocity analysis, May 2001. Organized meeting of the Geophysical Society of Houston Data Processing Special Interest Group on multicomponent seismic data processing, March 2000.

"Overpressure prediction using converted mode reflections from base of salt," Monica Miley and Walter Kessinger, presented at the Fall 1999 International SEG Meeting in Houston.

"AVO Attribute Volume Generation Using 3-D DMO/PSI" Walter Kessinger, HARC 3-D AVO/Imaging Consortium Meeting, May 1999.

"High Performance Seismic Computing" Walter Kessinger, IEEE Houston Chapter dinner meeting, January 28, 1999.

"Two-pass 3-D prestack depth imaging of the SEG salt model data," Walter Kessinger, presented at the Fall 1998 AMGE Meeting in Veracruz, Mexico and presented at the Fall 1999 SEG International Meeting in Houston.

"Subsalt imaging in Coatzacoalcos, Mexico, using two-pass 3-D prestack depth imaging," Jorge A. Mendoza-Amuchastegui, Arturo Diego-Orozco, Walter Kessinger and Jeno Gazdag, presented at the Fall 1998 International SEG Meeting in New Orleans.

"Elastic modeling initiative, part I: objectives," Leigh House, Kay Wyatt, Walter Kessinger and Shawn Larsen, presented at the Fall 1998 International SEG Meeting in New Orleans.

"Subsalt interpretation using integrated seismic modeling and processing," Monica Miley, Walter Kessinger and Jeff Ogilvie, presented at the Fall 1997 International SEG Meeting in Dallas.

"Seismic acquisition and processing to image convergent zones," Manik Talwani and Walter Kessinger, *The Island Arc*, Autumn 1997.

"Two-pass 3-D prestack depth imaging of a North Sea salt structure," Vincent Devaux, Monica Miley, and Walter Kessinger, presented by Walter Kessinger at the Subsalt '97 Technology Conference and Exhibition, January 28-30 in Houston.

"Advantages of synthetic forward modeling for subsalt processing and interpretation," Jeff Ogilvie, Walter Kessinger and Mike Greene, presented at the Subsalt '97 Technology Conference and Exhibition, January 28-30 in Houston.

"Elastic wavefield modeling of salt bodies," Walter Kessinger and Riju John, presented in a post-convention workshop following the Fall 1996 International SEG Meeting in Denver and at the Subsalt '97 Technology Conference and Exhibition, January 28-30 in Houston.

"Subsalt imaging using mode converted energy and acoustic depth migration," Walter Kessinger and Murali Ramaswamy, presented at the Fall 1996 International SEG Meeting in Denver.

"Subsalt response of elastic wavefield modeling," Walter Kessinger, Ronit Strahilevitz and Murali Ramaswamy, presented at the Fall 1995 International SEG Meeting in Houston and the November 1995 GSH Processing SIG meeting.

"3-D velocity model building - defining base of salt by inverting gravity data," Manik Talwani and Walter Kessinger, presented at the Fall 1995 International SEG Meeting in Houston.

"Interpretive velocity estimation and depth migration," Walter Kessinger, Anat Canning, Ramon Carbonell, Manik Talwani, and Gerald Gardner, invited paper presented in the *Recent Advances and the Road Ahead* session at the Fall 1993 International SEG Meeting in Washington, D.C.

"Subsalt imaging by iterative 3-D depth migration," Walter Kessinger, presented at the 1993 SEG Summer Research Workshop in Rancho Mirage, California, and invited paper presented at the Fall 1993 International SEG Meeting in Washington, D.C.

"Extended split-step Fourier depth migration," Walter Kessinger, presented at the Fall 1992 International SEG Meeting in New Orleans and at the December 1992 GSH Processing SIG meeting.

"Three-dimensional seismic imaging of the Costa Rica accretionary prism: field program and migration examples," Paul L. Stoffa, Thomas H. Shipley, Walter Kessinger, Donald F. Dean, Rigmor Elde, Eli Silver, Don Reed, and Alvaro Aguilar, *Journal of Geophysical Research*, December 10, 1991.

"Split-step Fourier migration," Paul L. Stoffa, Jacob Fokkema, Raimundo Mesquita de Luna Freire, and Walter P. Kessinger, *Geophysics*, April 1990.

"Study of navigation data for a three-dimensional seismic survey," Walter Kessinger, Paul L. Stoffa, and Thomas H. Shipley, presented at the Fall 1988 International SEG Meeting in Anaheim.

"Three-dimensional seismic imaging of the accretionary wedge in the Middle America Trench off Costa Rica: navigation precision," Walter Kessinger, Charles R. Denham, Paul L. Stoffa, Thomas H. Shipley, Hugh V. Winkler, Alvaro Aguilar, and Francisco Rojas, presented at the American Geophysical Union Fall 1987 Meeting.

Geophysical Software Experience:

I have worked with a number of geophysical software packages, including the SIGMA^3 GeoPRO and 3DGeo platforms, the Paradigm GeoDepth and Echos platforms, Landmark's ProMAX/SeisSpace, CGG's Hampson-Russell, IHS's Kingdom, and proprietary processing software from various venders. I also write simple Unix scripts, and Fortran and C applications.