Samuel D. LeRoy

Petroleum Geologist / Geophysicist

Texas Licensed Professional Geoscientist (Geology) No. 2713

12000 Westheimer, Suite 320
Houston, Texas 77077
Phone: 281-556-9766
Fax: 281-556-9778
email: earthview@aol.com

Summary of Experience :

Application of integrated Geologic, Geophysical, Computer Imaging for petroleum exploration and development. Integration of seismic processing with interpretation, especially for AVO and seismic velocity integration in geopressured environments. Extensive workstation experience on SMT. "Show and tell" experience on GeoQuest and Landmark platforms. Familiar with Spotfire data visualization programs. Experienced user of Hampson-Russell AVO analysis and modeling software.

Experience :

1993 - Present. VP and Geologist, EarthView Associates, Inc. Seismic 2-D and 3-D interpretation and mapping, prospect generation, prospect review, project coordination, geopressure research and application to petroleum exploration and development, computer-aided visualization, economic risk documentation, statistical consulting, teaching of computer mapping methods, and continental margin analysis. Areas worked include shelf and deepwater Gulf of Mexico, Texas (North, Gulf Coast, West, and South), South Louisiana, Chad in Central/North Africa, Brunei, New Zealand, Northwest Shelf of Australia, Paraguay, offshore Madagascar, West African offshore seismic and gravity interpretations.

1981 - 1993. Geologist, Conoco, Inc.

1981 - 1985. Petroleum field development geology and geophysics in offshore Louisiana and Texas

1985 - 1990. Prospect generation and regional geological, seismic, gravity/magnetics and risk evaluation for offshore petroleum exploration in the Gulf of Mexico. Areas mapped included both deepwater and shelf.

1990 - 1992. Cross-disciplinary collaboration on continental margin analysis with an emphasis on petroleum generation and accumulation.

Margins studied included:

Gulf of Mexico
Central West Africa with a concentration on Nigeria,
Northwest Shelf and onshore / offshore Perth Basin of Australia,
North Slope of Alaska.

1979 - 1981. Research Assistant, University of Southern California. Computer consulting in data base design, implementation, and computer mapping.

1979 - 1979 summer hire. Field Geologist, Texaco, Inc. Worked in California Coast Ranges: Field mapping and sampling, property ownership research, and owner/tenant contacts.

1978 - 1979. Teaching and Research Assistant, University of Southern California.

1975 - 1978. Geologist, Texaco, Inc. Petroleum exploration and development geology in California onshore and offshore and Alaska.

1974 - 1975. Investigator and Manager, Coastal Research Group. Implemented and directed a group of college students in an oil and gas lease sale assessment of offshore southern California. Through innovative use of limited resources we supplied the client with a gas supply assessment and geologic report at minimal cost.

1972 - 1974. Teaching Assistant, University of Southern California.

Summer 1972. University of Miami. Member of scientific crew, R/V Columbus Iselin in survey of the continental margin of West Africa.

Education :

Ph.D. in Geology,	1981.	University of Southern California, Los Angeles, California.
M.A. in Geology,	1975.	University of Southern California, Los Angeles, California.
B.S. in Geology,	1972.	University of Miami, Coral Gables, Florida.

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Accomplishments in Petroleum Exploration and Development:

Established EarthView Associates, Inc. as a team of experienced petroleum professionals dedicated to high quality consulting and training in geology, geophysics, and biostratigraphy. This company has provided support services for clients seeking to open new plays, revitalize old trends, evaluate acquisitions, understand unexpected geology and find new pay in old fields.

Lease Acquisition and Prospect / Trend Mapping:

Onshore Texas and Louisiana:

- Gulf Coast Miocene, Frio, Vickburg, Yegua, Wilcox, and Jurassic prospect generation and evaluation. Mapping of 3D seismic surveys, AVO / AVA analysis, log correlation, interpretation of depositional environments.
- North Texas Paleozoics, seismic interpretation in Hardeman Basin, Bend Arch, Barnett Shale of Fort Worth Basin.
- West Texas seismic interpretation and prospect evaluation on Central Basin Platform, Midland Basin.

Gulf of Mexico shallow and deep water:

- Oligocene, Miocene, Pliocene, and Pleistocene in Louisiana and Texas. Methods used included 2D and 3D seismic interpretation, log correlation, interpretation of depositional environments.
- Geopressure detection and modeling: Applied the concepts of dynamic pressure seals to exploration for hydrocarbons, geopressure detection using AVO, AVF and seismic velocity; Developed improved methods for AVO analysis in geopressured environments; Mapped deep geopressure distribution in parts of the Gulf of Mexico using residual gravity response.
- Modeled salt-layer gravity response in support of sub-salt exploration efforts.
- Vertical Migration of Hydrocarbons in the Gulf of Mexico: Developed and applied concepts of vertical migration to support lease acquisitions on the shelf and in deep water areas of Offshore Louisiana and Texas.
- Field Extension Campaigns in the West Cameron Area of the Gulf of Mexico..

California onshore and offshore:

- Prospect Generation in the San Joaquin Basin, the Santa Maria Basin, and Offshore.
- Field Extension Campaigns in the Ventura Basin.

ANWR on Alaska's North Slope:

- Prospect evaluations made use of seismic, well, gravity, and magnetics data; and included basin hydrocarbon generation and preservation estimation from an integrated continental margin model.

Computer Visualization and Modeling:

- Developed a "Statistical Gravity" modeling method for basin analysis on continental margins and applied it to West Africa, Australia, Madagascar, Indonesia, The Gulf of Mexico, and the North Slope of Alaska.
- Developed a Seismic Multi-Attribute Display and analysis procedure for use in seismic stratigraphy.
- Applied seismic stratigraphic methods in U.S. Gulf Coast, California, Alaska, Algeria, and offshore Nigeria.
- Developed a fast "seed-model" procedure for predicting sand transport in deep-water environments, including salt-layer regions of the deepwater Gulf of Mexico

Economic Risk Evaluation at the Field, Prospect, Trend, and Basin Scales:

Supply clients with realistic benchmark evaluation of chance for success for property acquisition, development, and exploration projects using integrated geology, geophysics, and statistical methods.

Professional Affiliations:

American Association of Petroleum Geologists, Society of Exploration Geophysicists, Houston Geological Society, Geophysical Society of Houston. Chaired the Employment Referral Committee of the GSH 1996-2009.

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Recent Presentations and Publications :

G. Michael Shook, Samuel D. LeRoy and William M. Benzing, 2007. SYSTEMS FOR LOW FREQUENCY SEISMIC AND INFRASOUND DETECTION OF GEO-PRESSURE TRANSITION ZONES – U.S. Patent 7,283,422 - Oct. 16, 2007.

G. Michael Shook, Samuel D. LeRoy and William M. Benzing, 2006. METHODS AND SYSTEMS FOR LOW FREQUENCY SEISMIC AND INFRASOUND DETECTION OF GEO-PRESSURE TRANSITION ZONES – U.S. Patent 7,079,449 - July 18, 2006.

H.R. Nelson, Jr., S.D. LeRoy, L.R. Denham, P.J. Desai, M.E. Guthrie and M.A. Dunn 2006. AVO AND SEISMIC PROCESSING IMPLICATIONS FROM A REGIONAL DATABASE OF VELOCITY AND OTHER ACOUSTIC ROCK PROPERTY TRENDS - European Association of Geoscientists and Engineers EAGE 68th Conference & Exhibition — Vienna, Austria, 12 - 15 June 2006.

Sam LeRoy, Lloyd Weathers, Eric von Lunen, Wes Johnson and Steve Trammel, 2004. AVO MODELS IN GEOPRESSURE SETTING – Deep Gulf of Mexico shelf - Houston SIPES February Luncheon Meeting.

Lloyd Weathers, Sam LeRoy, Eric von Lunen, Wes Johnson and Steve Trammel, 2003. AVO MODELS IN GEOPRESSURE SETTING – Deep Gulf of Mexico shelf - SEG convention abstracts.

Co-author of the AVO/SEISMIC section of IHS Energy's 2003 Deep Shelf Gulf of Mexico Production Performance Study .

Samuel D. LeRoy and Ralph Stone, 2003. WEST MADAGASCAR CONTINENTAL MARGIN ANALYSIS: Crustal classification, regional geologic structure and sedimentary thickness - Houston Geological Society and Petroleum Exploration Society of Great Britain Second International Symposium "Africa: New Plays—New Perspectives" Houston, 3–4 September 2003.

Ralph A. Stone and Samuel D. LeRoy, 2003. MADAGASCAR DEEPWATER 2: How new seismic data show basin off western Madagascar – Oil and Gas Journal, March 10, 2003.

Ralph A. Stone and Samuel D. LeRoy, 2003. MADAGASCAR DEEPWATER 1: Deepwater basin confirmed far off western Madagascar – Oil and Gas Journal, March 3, 2003.

Sam LeRoy, Bill Benzing and H. Roice Nelson, Jr. 2002. MAPPING AND IMAGING OF GEOPRESSURE GEOMETRY WILL FOCUS EXPLORATION AND DEVELOPMENT ON REMAINING UPSIDE RESERVES - Presentation to Corpus Christi SIPES luncheon, February 26, 2002.

LeRoy, S.D., W.M. Benzing G.M. Shook, and S. Starr, 2001. PART I: "Vapor-lock" geopressure seals observed in seismic evaluation – Offshore, January 2001.

LeRoy, S.D., W.M. Benzing G.M. Shook, and S. Starr, 2001. PART II: Dynamic seals control hydrocarbon fluid flow through US Gulf basins – Offshore, February 2001.

G.M. Shook, S.D. LeRoy and William M. Benzing, 1998. Reservoir and Geophysical Properties of Vapor-Lock Pressure Seals . In: PRESSURE REGIMES IN SEDIMENTARY BASINS AND THEIR PREDICTION - The American Association of Drilling Engineers Industry Forum.

S.D. LeRoy, 1998. TREATING THE GULF OF MEXICO AS A CONTINENTAL MARGIN PETROLEUM PROVINCE . The Leading Edge, February, 1998 pp. 209-212.

Benzing, W.M., G.M. Shook and S.D. LeRoy, 1996. THE FORMATION AND BEHAVIOR OF "VAPOR LOCK" PRESSURE SEALS AND ASSOCIATED HYDROCARBON ACCUMULATIONS IN GEOLOGICALLY YOUNG BASINS. Transactions of the Gulf Coast Association of Geological Societies v XLVI pp. 25-37.

LeRoy, S.D. and Brumbaugh, W.D., 1995. THE GULF OF MEXICO AND WEST AFRICA: Gravity and Topographic Visualization of Rift-Fabrics. Gulf Coast Section SEG Annual Meeting, Houston, Texas.

LeRoy, S.D., 1994. MULTI-ATTRIBUTE / COMPUTER-AIDED SEISMIC STRATIGRAPHY - Semi-Automated Prediction of Depositional Environments. . American Association of Petroleum Geologists Annual Convention, Denver, Colorado.

LeRoy, S.D. and Brumbaugh, W.D., 1992. THE GULF OF MEXICO AND WEST AFRICA: Rift-Fabric Control of Continental "Feather Edges" . European Association of Petroleum Geologists Annual Meeting, Paris, France.

LeRoy, S.D. and Brumbaugh, W.D., 1992. THE GULF OF MEXICO AND WEST AFRICA: Rift-Fabric Control of Continental "Feather Edges" . Nigerian Association of Petroleum Explorationists 10th Annual Conference, Lagos, Nigeria.

LeRoy, S.D., 1990. CRUSTAL STRUCTURE OF THE GULF OF MEXICO: New Perspectives on Structural Trends and Salt Geometry from Gravity and Magnetics . Geological Society of America Annual Convention, Dallas, Texas.