David K. Baskin

Senior Project Geochemist

David Baskin has more than 40 years' experience in the petroleum industry and has made numerous internationally recognized contributions to exploration and production geochemistry. David was the 2014 recipient of the AAPG Energy Minerals Division President's Certificate for Excellence in Oral Presentation 2013 AAPG Annual Convention and Exhibition for the talk "Allocating the Contribution of Oil from the Eagle Ford Formation, the Buda Formation, and the Austin Chalk to Commingled Production from Horizontal Wells in South Texas Using Geochemical Fingerprinting Technology", David began his career as a well-site geologist for Exploration Logging Inc. David then worked for nearly 30 years at Chevron's research facility in La Habra, California, where he spent many years as an organic petrologist and source-rock geochemist. At Chevron, David helped develop an analytical program that integrated kerogen microscopy, pyrolysis, and elemental analysis data to evaluate the generative potential and generative history of source-rocks. Following his years at Chevron, David was Vice President of OilTracers LLC. In 2010, OilTracers was acquired by Weatherford Laboratories. David also has extensive experience in reservoir geochemistry where he developed techniques which are now widely used to predict type (gas vs. oil) and quality (API gravity) of petroleum accumulations, prior to testing. These techniques are discussed in some of his numerous publications. David has also made significant contributions to techniques for correlating oils from continuous reservoirs using gas chromatography. He received a Special Recognition Award from Chevron (1996) for fingerprinting and correlating oils in the Deep Water, Gulf of Mexico. Dave is also recognized for his expertise in interpreting Light Hydrocarbon data (C_7 Analysis), and for his special interest in correlating biodegraded oils and oils contaminated with synthetic drilling mud additives. He received a B. S. degree in Geology from San Jose State University and continued graduate studies at both California State University at Fullerton and California State University at Long Beach. He is currently a member of AAPG, SEPM, GSA, and TSOP.

EDUCATION

B. S. degree in Geology from San Jose State University (1967).

INDUSTRY EXPERIENCE

Weatherford Laboratories, El Dorado Hills, California:
Senior Project Geochemist. Integration of OilTracers LLC business into Weatherford Laboratories (2010-present). OilTracers LLC was acquired by Weatherford Laboratories on March 3, 2010.

OilTracers, L.L.C., Dallas, Texas:
Vice President: Reservoir geochemistry and source rock evaluation projects. (2002-2010).

Chevron Research Technology Co. (ChevronTexaco), Richmond, California:
Staff Reservoir Geochemist: Worked in Algiers lab and New Orleans office to promote the use of oil fingerprinting to solve reservoir production problems. Completed numerous technical service reports from shelf and Deep Water oil and gas fields in the Gulf of Mexico. Also completed major reservoir continuity studies concerning Eastern Scotian Shelf (Hibernia and Hebron), North Sea (Britannia), Angola (Banzala), and mid-continent USA. (July 1999 – Dec. 2001).

Chevron Petroleum Technology Co., La Habra California:
Staff Geochemist (Reservoir Geochemistry Team): Development and application of techniques using geochemistry to solve exploration and production problems in addition to completing numerous technical service projects world-wide. Developed technique for evaluating reservoir fluid type prior to testing (Nigeria), for correlating core extracts and oils contaminated with oil based drilling mud (Gulf of Mexico), for allocating production to individual pipelines, and for evaluating source of solid bitumen in Tengiz reservoirs. (Jan. 1993 –

July 1999).

Chevron Oil Field Research Co., La Habra California:
Senior Research Geologist (Geology Division): Primarily responsible for oil source rock evaluation and oil correlation projects world-wide, with particular emphasis on the Monterey Formation of California. Developed technique for evaluating oil quality (API gravity) prior to testing in complex Monterey fractured shale reservoirs using wt.% sulfur and Rock-Eval. Used hydrous pyrolysis results to establish correlations between atomic H/C ratio and thermal maturity of source kerogen as a guide for estimating percent conversion and expulsion. (June 1985 – Jan. 1993).

***Chevron Oil Field Research Co., La Habra California*:**
Research Geologist (Geology Division): Responsible microscopic organic analysis program for source rock evaluation, including vitrinite reflectance analysis, fluorescence analysis, and transmitted light analysis. Work included integrating pyrolysis, elemental analysis and microscopy into an organic facies interpretation. Helped develop organic classification system based on coal chemistry rather than organic matter morphology which improved generation potential estimates. Developed method for predicting atomic H/C ratio of kerogen microscopically as a valuable check on pyrolysis and elemental analysis data. Completed reports for major source rock systems including the Monterey, Phosphoria, Baken, Green River, La Luna, Toruk, Torcian, Duvernay, Kimmeridgian, Woodford, and Tuwaiq Mountain. (March 1974 – June 1985).

***Standard Oil Company of California, Western Operations, Richmond, California*:**
Palynology Lab Supervisor (Geology Department): Supervised palynology sample processing and slide preparation in addition to evaluating organic matter for source potential and indications of thermal maturity. Developed new approaches for isolating organic matter and preparing vitrinite reflectance slides. (June 1972 – March 1974).

***Exploration Logging Inc., Sacramento California*:**
Well-site Logging Geologist: Responsible for logging, describing, and evaluating oil and gas shows during drilling. Work included daily verbal reports to oil companies regarding progress and status of hydrocarbon shows. Worked primarily in California (onshore and offshore), and in Alaska. (June 1969 – March 1972).

ADDITIONAL CREDENTIALS

Awards:

2014 Recipient of the AAPG Energy Minerals Division President's Certificate for Excellence in Oral Presentation 2013 AAPG Annual Convention and Exhibition for talk "Allocating the Contribution of Oil from the Eagle Ford Formation, the Buda Formation, and the Austin Chalk to Commingled Production from Horizontal Wells in South Texas Using Geochemical Fingerprinting Technology" AAPG Search & Discovery #41268.

1996 Recipient of Special Recognition Award from Chevron for fingerprinting and correlating oils in the Deep Water, Gulf of Mexico

PUBLICATIONS

McCaffrey, M. A., D. K. Baskin, B. A. Patterson, D. H. Ohms., C. Stone, D. Reisdorf (2012) Oil fingerprinting dramatically reduces production allocation costs. World Oil, March 2012, p 55-59.

McCaffrey, M. A., D. H. Ohms., M. Werner, C. Stone, D. K. Baskin, and B. A. Patterson (2011) Geochemical allocation of commingled oil production or commingled gas production. Society of Petroleum Engineers Paper Number 144618. p 1-19.

Warner, J. L., D. K. Baskin, R. J. Hwang, R. M. K. Carlson, and M. E. Clark, 2007, Geochemical evidence for two stages of hydrocarbon emplacement and the origin of solid bitumen in the giant Tengiz field, Kazakhstan, in P. O. Yilmaz and G. H. Isaksen, editors, Oil and gas of the Greater Caspian area: AAPG Studies in Geology 55, p.

165–169.

McCaffrey, M. A., D. K. Baskin, M. A. Beeunas, and B. A. Patterson, 2006, Reducing the Cost of Production Allocation by 95% Using a Geochemical Technique: Abstract, AAPG 2006 Annual Convention, Houston, Texas, April 9-12, 2006.

Baskin, D. K., 2001, Comparison between atomic H/C and Rock-Eval hydrogen index as an indicator of organic matter quality: in The Monterey Formation - From Rocks to Molecules; C. M. Isaacs, and J. Rullkotter, eds., New York, Columbia University Press, p. 230-240

Beeunas, M. A., T. A. Hudson, J. A. Valley, D. K. Baskin, and W. Y. Clark, 2000, Identification of reservoir discontinuities using hydrocarbon compositional analyses, Genesis field (Green Canyon 205), Gulf of Mexico: AAPG Annual Meeting, New Orleans, Louisiana, April 16-19, 2000, *AAPG Bulletin*, Vol. 84, No. 13, (supplement), Abstract.

Hwang, R. J., D. K. Baskin, and S. C. Teerman, 2000, Allocation of commingled pipeline oils to field production: *Organic Geochemistry*, v. 31, p. 1463-1474.

Hwang, R. J., D. K. Baskin, and S. C. Teerman, 1999, Allocation of commingled pipeline oils to field production: 19th International Meeting on Organic Geochemistry, v. 2: Istanbul, Turkey, Tubitak Marmara Research Center Earth Sciences Research Institute, p. 602, Abstract.

Beeunas, M. A., D. K. Baskin, and M. Schoell, 1999, Application of gas geochemistry for reservoir continuity assessment and identification of fault seal breakdown, South Marsh Island 61, Gulf of Mexico, AAPG Hedberg Research Conference "Natural Gas Formation and Occurrence" June 6-10, 1999, Durango Colorado, p. Abstract.

Beeunas, M. A., T. A. Hudson, J. A. Valley, D. K. Baskin, and W. Y. Clark, W.Y., 1999, Reservoir continuity and architecture of the Genesis Field, Gulf of Mexico (Green Canyon 205): An integration of fluid geochemistry within the geologic and engineering framework: AAPG Gulf Coast Section (GCAGS) Meeting, Lafayette, Louisiana, September 15-17, 1999, Transactions of the 49th GCAGS Annual Convention, Abstract.

McMillen, S. J., and D. K. Baskin, 1997, Using petroleum geochemistry analytical methods to evaluate bioremediation of soils at upstream sites: *AAPG Bulletin*, v. 81, p. 81, Abstract.

Baskin, D. K., R. A. Garber, P. M. Harris, J. L. Warner, W. S. Hallager, and K. Suisinov, 1997, Two-stage hydrocarbon migration model for Tengiz Field Kazakhstan: AAPG Annual Meeting Programs, p. A9.

Baskin, D. K., 1997, Atomic H/C ratio of kerogen as an estimate of thermal maturity and organic matter conversion: *AAPG Bulletin*, v. 81, p. 1437-1450.

Schoell, M., M. A. Beeunas, D. K. Baskin, F. Monnier, L. I. Eisenberg, and G. L. Valenti, 1996, Habitat of natural gases in Papua New Guinea: *AAPG Bulletin*, Vol. 80, No. 13, (supplement), Abstract.

Beeunas, M. A., D. K. Baskin, J. L. Jurgens, A. R. Dincau, and M. Schoell, 1996, Application of gas geochemistry for reservoir continuity assessment, Gulf of Mexico: AAPG/EAGE Research Symposium, "Compartmentalized Reservoirs: Their Detection, Characterization and Management, Abstract.

Baskin, D. K., R. J. Hwang, and R. K. Purdy, 1995, Predicting gas, oil, and water intervals in Niger Delta reservoirs using gas chromatography: *AAPG Bulletin*., v. 79, p. 337-350.

Hwang, R. J., and D. K. Baskin, 1994, Reservoir connectivity and oil homogeneity in a large-scale reservoir: *Middle East Petroleum Geoscience*, Geo 94, v. 2, p. 529-541

Baskin, D. K., and R. W. Jones, 1993, Prediction of oil gravity prior to drill-stem testing in Monterey Formation reservoirs, offshore California: *AAPG Bulletin*, v. 77, p. 1479-1487.

Baskin, D. K., and K. E. Peters, 1992, Early generation characteristics of a sulfur-rich Monterey kerogen: *AAPG Bulletin*, v. 76, p. 1-13.

Baskin, D. K., 1979, A method of preparing phytoclasts for vitrinite reflectance analysis: *Journal of Sedimentary Petrology*, v. 49, p. 633-635.

RECENT CONFERENCE PRESENTATIONS (ORAL)

Presentation Title: Allocating the Contribution of Oil from the Eagle Ford Formation, the Buda Formation, and the Austin Chalk to Commingled Production from Horizontal Wells in South Texas Using Geochemical Fingerprinting Technology.
Conference: 2013 American Association of Petroleum Geologists Annual Convention and Exhibition, Pittsburgh, Pennsylvania, May 21, 2013.