



Michael G. McClure

Current Position

Principal Geologist

Profession

Geology

Years' Experience

39+

Education

MS - Geology,
University of Kentucky,
Lexington, KY

BS - Geology, Brigham
Young University,
Provo, UT

Professional Registrations

CPG - AIPG

PG - KY, VA

Affiliations

American Association of
Petroleum Geologists

American Institute of
Professional Geologists

The Society for Organic
Petrology

Energy & Mineral Law
Foundation

Mr. McClure conducts geologic evaluations for coal mining and coalbed methane operations where he incorporates borehole and rock mechanics data, underground mapping, and geophysical data into the reporting process. He also directs the company's coalbed methane laboratory for exploration projects conducted in Tennessee, Virginia, West Virginia, Kentucky, Ohio, Oklahoma, Pennsylvania, Illinois, and Wyoming.

Significant Projects

- > Analyzed surface and underground coal mining and coalbed methane resources in major basins of the USA, and internationally within selected areas of Mexico, Venezuela, Canada, Chile, Czech Republic, and China
- > Provided geologic support for a mining accident investigation in West Virginia

Specific Projects

- > **Southwestern Virginia, USA:** Coordinated geophysical logging operations for 100 coalbed methane wells that included quality control, log interpretation, coalbed methane desorption testing, and analysis of coalbed methane potential for coal beds in the Central Appalachian Basin of Virginia, and computer mapping.
- > **Pennsylvania, USA:** Coordinated drilling, geologic mapping, coal quality testing, and reserve report preparation for several geologically complex properties in the Anthracite coal fields.
- > **Shanxi Province, China:** Coordinated evaluation of deep-mineable coal reserves and development of coalbed methane resources within a large coal mining leasehold which has since been opened as a large longwall mining operation
- > **Southern Chile:** Conducted an audit of geologic conditions for a financial institution on an undeveloped coal reserve property, which has since been opened as a surface mining operation.
- > **British Columbia, Canada:** Coordinated geologic mapping of a structurally complex property.
- > **Turkey:** Conducted an audit of geologic conditions for limestone and metallic ore deposits.

Recognitions

- > Graduate Fellowship Award, Federal Office of Surface Mining and the University of Kentucky, 1985–1986.
- > Sigma Gamma Epsilon, while pursuing undergraduate studies.



Memberships

- > Tazewell County Virginia Economic Development Commission, Member of ad hoc committee to study feasibility of making natural gas available for industrial usage, 1992.
- > West Virginia Coalbed Methane Group - Member of ad hoc committee representing Coal and Oil & Gas Industry to draft legislation governing the development of coalbed methane within the state, 1993.
- > Energy and Mineral Law Foundation, Lexington, Kentucky.

Professional History

2017 – Present

Principal Geologist

Marshall Miller & Associates, Inc.

2014 – 2016

Sr. Supervisory Geologist

Cardno, Inc.

2003 – 2014
1992 – 2003

Vice President

Senior Coal Geologist / Linear Analyst & Coalbed Methane Laboratory Director

Marshall Miller & Associates, Inc.

Responsible for conducting geologic evaluations for coal mining and coalbed methane operations, incorporating borehole and rock mechanics data, underground mapping, and geophysical data. Director of coalbed methane laboratory for exploration projects in Tennessee, Virginia, West Virginia, Kentucky, Ohio, Oklahoma, Pennsylvania, Illinois, and Wyoming. Analysis of coal mining and coalbed methane resources in major basins of the USA, and internationally within selected areas of Mexico, Venezuela, Chile, Canada, Czech Republic, Australia, and China; provide geologic support for legal cases in Virginia, and West Virginia.

1990 - 1992

Coalbed Methane Project Geologist

Occidental Petroleum, Inc.

Duties included coordinator of geophysical logging operations for 100 coalbed methane de-gassification wells in southwestern Virginia; quality control; log interpretation; coalbed methane desorption testing of the Pocahontas # 3 seam; analysis of coalbed methane potential for 15 individual coal beds in the Central Appalachian Basin of Virginia; computer mapping; preparation of geologic and ground water sections of state permits.

1986 - 1990

Division Mining Geologist

Island Creek Coal Company

Duties included core drilling and ground water well installation in Western Kentucky; geologic hazards mapping in underground mines; and creation and maintenance of a computer database of core hole and coal quality data; coalbed methane desorption testing of the Western Kentucky No. 9 and 11 seams.



1985 - 1986

Consulting Geologist

Responsibilities included geological and geotechnical work for an engineering firm while attending graduate school. Provided geologic reconnaissance of proposed mining sites in Kentucky and Tennessee.

1985

Hydrogeologist

Virginia Department of Mines, Minerals & Energy

Evaluated potential of the National Coal Resource Database System (NCRDS) to provide hydrogeologic data in the coalfields of southwest Virginia. Area of pilot project was the Appalachia, Virginia, 7.5-Minute USGS Quadrangle.

1979 - 1985

Mining Geologist

Pittston Coal Company

Experience included three years of core drilling in southwestern Virginia overlapping five years of environmental permitting. Permit work included evaluation of probable environmental effects due to mining, collecting, and testing of rock samples for potential acid drainage; proposed and constructed ground water monitoring systems; underground geologic mapping; cross section drafting; and response to comments from state mining and environmental regulatory agencies.

1978

Engineering Management Training/Underground Miner

Pittston Coal Company

Hands-on training in an active underground coal mine including: continuous miner, roof bolter, shuttle car, scoop, front-end loader, and mechanical-electrical maintenance

Publications & Presentations

- > GSA Meeting, "Factors Affecting the Gas Content of Pocahontas Basin Coal Beds, SW Virginia: Implications for Coal-Based Carbon Capture/Storage and Enhanced Coal Bed Methane Production," Cortland F. Eble, S.F. Greb, Michael G. McClure, Mathew Conrad, Ryan P. Grimm, Denver, Colorado, December 2010.
- > AAPG Eastern Section Meeting, "CBM Gas Composition Trends – Central and Northern Appalachian Basins," Michael G. McClure, Lexington, Kentucky, September 2007.
- > 19th Annual International Pittsburgh Coal Conference, "Geologic Characteristics of a Gassy Anthracite Coal Seam in the Peoples Republic of China", Michael G. McClure and K. Scott Keim, Pittsburgh, Pennsylvania, September 2002.
- > Society of Petroleum Engineers, "Coalbed Methane Developments in the Central Appalachians", Michael G. McClure, Kentucky Section meeting, April 2002.
- > Strategic Research Institute, 2nd Annual Coalbed and Coal Mine Methane Conference, Eastern Version, "Commercial Coalbed Methane Potential in Qinshui Basin, Shanxi Province, China", Michael G. McClure, Annapolis, Maryland, July 2001.
- > Bluefield College Elderhostel Seminar, *Coal Geology, & Coalbed Methane*, Michael G. McClure, Bluefield, Virginia, May 17–21, 1999.
- > Virginia Association of Assessing Officers, "Appraising Coal Reserves, Coal Mines and Gas Reserves", Michael G. McClure and John Feddock, Regional Seminar, Abingdon, Virginia, October 1997.



**Continuing Education
& Seminars Attended**

- > AAPG Eastern Section Meeting, "Trace Element Concentrations of Southern Appalachian Coalbeds," Michael G. McClure and Marshall S. Miller, Charleston, West Virginia, October 1996.
- > MSHA Annual Refresher, Underground Safety Training
- > MSHA Annual Refresher, Surface Safety Training
- > AAPG Eastern Section Meeting, Lexington, Kentucky, September 2007
- > International Coalbed Methane Symposium, Tuscaloosa, Alabama, May 2007
- > International Coalbed Methane Symposium, Tuscaloosa, Alabama, May 2003.
- > MSHA Annual Refresher, Underground Safety Training, February 2003.
- > International Coalbed Methane Symposium, Tuscaloosa, Alabama, May 2001.
- > Coalbed Methane Productibility and Exploration Model: Defining Exploration Fairway, short course presented by Andrew R. Scott, Tuscaloosa, Alabama, May 2001.
- > International Workshop on Investment Opportunities in Coal Mine Methane Projects in China, Landmark Tower, Beijing, China, September 2000.
- > Appalachian Geological Society Meeting, "Experimental Uses for Coal," Dr. A. Stiller, West Virginia University, Bluefield, West Virginia, November 1999.
- > International Coalbed Methane Symposium, Tuscaloosa, Alabama, May 1999.
- > Appalachian Geological Society Meeting, "CBM Production in Southern West Virginia and Southwestern Virginia," Dr. Pramod Thakur, Bluefield, West Virginia, October 1998.
- > Coalbed Reservoir Gas-in-Place Analysis Short Course, Tesseract Corporation, Kingsport, Tennessee, February 1998.
- > North American Coalbed Methane Forum, Morgantown, West Virginia, November 1997. Society of Petroleum Engineers (SPE) Eastern Regional Meeting, Lexington, Kentucky, October 1997.
- > AAPG Eastern Section Meeting, Lexington, Kentucky, September 1997.
- > AAPG Eastern Section Meeting, Charleston, West Virginia, October 1996.
- > North American Coalbed Methane Forum and U.S. EPA Outreach Program, Pittsburgh, Pennsylvania, April 1996.
- > 14th International Conference on Ground Control in Mining, Morgantown, West Virginia, August 1995.
- > Geological Society of America – Symposium, Knoxville, Tennessee, April 1995.
- > North American Coalbed Methane Forum, Morgantown, West Virginia, October 1994.
- > EOSAT Seminar, Landsat and Beyond, Baltimore, Maryland, August 1994.
- > AAPG Eastern Section Meeting, Williamsburg, Virginia, September 1993.
- > Coalbed Methane Short Course, The Gas Research Institute, Abingdon, Virginia, October 1992.
- > Occidental Petroleum (Island Creek) Field Trip, East Kentucky Structural/Depositional Patterns in Pennsylvanian Coal Measures, May 1991.
- > AAPG Annual Convention, Dallas, Texas, April 1991.
- > AAPG Eastern Section Meeting, Bloomington, Indiana, September 1989.
- > "Stratigraphic and Structural Analysis of Growth–Faulted Regions Using Well Logs," AAPG Short Course, Houston, Texas, May 1989.



- > University of Kentucky, Coal Geology Seminar, Lexington, Kentucky, Spring 1988. Geological Society of America – Symposium, Lexington, Kentucky, April 1984.
- > Coal Mining and Hydrology Seminars, Southwest Virginia Community College, Richlands, Virginia, May 1981 and 1982.
- > Virginia Coal Seminar, Blacksburg, Virginia, November 1982.
- > AAPG 3rd Eastern Gas Shales Symposium, Morgantown, West Virginia, October 1979.