AGENDA: Shale Plays in the Intermountain West: Legal and Policy Issues

University of Colorado Boulder. Natural Resources Law Center

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SHALE PLAYS
in the Intermountain West:
Legal & Policy Issues

November 12, 2010
Grand Hyatt, Denver, Colorado
PROGRAM

8:30 – 8:35 Welcome, Introductions, and Opening Remarks
Mark Squillace, Director, Natural Resources Law Center.

8:35 – 10:00 Why all the hype about shale plays? Why here? Why now?
Michelle Michot Foss, Chief Energy Economist, Center for Energy Economics, Bureau of Economic
Geology; University of Texas–Austin.
Richard Nehring, Nehring Associates – Colorado Springs, CO.
Commentator: Randy Udall, Co-founder – Assoc. for the Study of Peak Oil-USA – Carbondale, CO.

10:00 – 10:15 Break

10:15 – 11:00 Recent Advancements in Exploration, Drilling, Production and Stimulation
Technologies for Sustainable Development of Unconventional Resources—
John Curtis, Professor of Geology and Geological Engineering and Director of the Potential Gas
Agency Colorado School of Mines – Golden, CO.
Will Fleckenstein, BP Adjunct Professor in the Petroleum Dept. and Director of PERFORM
Research, – Colorado School of Mines – Golden, CO and Managing Partner of Fleckenstein, Eustes
& Associates

11:00 – 12:15 Conservation Regulation, Voluntary and Compulsory Pooling: Challenges for
the Private and Public Sector in the Era of Horizontal Drilling and Hydraulic Fracturing
Bruce Kramer, McGinnis, Lochridge & Kilgore, LLP — Houston, TX; Adjunct Professor, University of
Colorado Law School – Boulder, CO
Commentator: Dave Neslin, Director, Colorado Oil & Gas Conservation Commission – Denver.

12:15 – 1:30 Lunch (on your own)

1:30 – 2:30 Water Considerations
Judy Jordan, Oil & Gas Liaison, Garfield County – Rifle, CO.
Katy Dunlap, Eastern Water Project Director, Trout Unlimited, Inc. — Burdett, NY.

2:30 – 3:15 Air Quality Concerns
John Jacus, Davis Graham & Stubbs – Denver, CO.
Jeremy Nichols, Climate & Energy Program Director, WildEarth Guardians – Denver, CO.

3:15 – 3:30 Break

3:30 – 4:30 The Evolving Policy
Avi Garbow, Deputy General Counsel, U.S. Environmental Protection Agency – Washington, DC.
John C. Martin, Crowell & Moring, LLP – Washington, DC.
Presenters’ BIOS

William Boyd — joined the University of Colorado Law School faculty in 2008. Professor Boyd received his Ph.D. from the Energy & Resources Group at UC-Berkeley and his J.D. from Stanford Law School, where he was an Articles Editor on the Stanford Law Review. After law school, he clerked for Judge Diana Gibbon Motz of the U.S. Court of Appeals for the Fourth Circuit. Professor Boyd then served as American Association for the Advancement of Science Congressional Science Fellow and Counsel on the Democratic minority staff of the U.S. Senate Committee on Environment & Public Works. He then practiced energy, environmental and climate change law with the firm of Covington & Burling LLP in Washington, DC. He continues to be actively involved in legislative and regulatory debates on energy and climate change at state, national, and international levels, and is currently senior advisor and project lead for the Governors’ Climate and Forests Task Force (GCF), www.gcftaskforce.org.

As a faculty member at the law school, Professor Boyd teaches energy law & regulation, climate change law & policy, and environmental law. His current research focuses on legal and institutional design issues associated with emerging GHG compliance markets; integration of forests and land use into climate policy; carbon accounting and verification systems for biofuels; regulatory challenges associated with implementation of smart grid technologies; electricity policy; technology transfer in the energy and climate fields; risk assessment; and the role of science and technology in law. Since arriving at the University of Colorado, Professor Boyd has played an active role in establishing the new Renewable and Sustainable Energy Institute (RASEI) – a joint institute between the National Renewable Energy Laboratory (NREL) and the University of Colorado, Boulder -- serving on the campus-wide steering committee that recommended the creation of RASEI and as an inaugural fellow on the RASEI Council of Fellows. He also serves as the University of Colorado representative for the Joint Institute for Strategic Energy Analysis (JISEA) – a newly formed collaborative energy analysis effort between NREL, University of Colorado, Colorado State University, Colorado School of Mines, MIT, and Stanford.

John B. Curtis — is Professor of Geology and Geological Engineering and Director of the Potential Gas Agency at the Colorado School of Mines. Dr. Curtis is also co-director of the CSM Unconventional Natural Gas Institute. He received a B. A. and M.Sc. in geology from Miami University and a Ph.D. in geology from The Ohio State University, and is a licensed Professional Geologist (Wyoming). He was an officer in the U. S. Air Force from 1972-1975.

Dr. Curtis has been at the Colorado School of Mines since July, 1990. He had 15 years prior experience in the petroleum industry with Texaco, Inc., SAIC, Columbia Gas, and Brown & Ruth Laboratories/Baker-Hughes. He serves on and has chaired several professional society and natural gas industry committees, which previously included the Supply Panel, Research Coordination Council, and the Science and Technology Committee of the Gas Technology Institute (Gas Research Institute). He co-chaired the American Association of Petroleum Geologists (AAPG) Committee on Unconventional Petroleum Systems from 1999-2004 and is an invited member of the AAPG Committee on Resource Evaluation. He was a Counselor to the Rocky Mountain Association of Geologists from 2002-2004.

Dr. Curtis is an Associate Editor of the AAPG Bulletin and The Mountain Geologist. He has published studies and given numerous invited talks concerning hydrocarbon source rocks, exploration...
Presenters’ BIOS — continued

for unconventional reservoirs, and the size and distribution of U.S., Canadian and Mexican natural gas resources and comparisons of resource assessment methodologies. As Director of the Potential Gas Agency, he directs a team of 100 geologists, geophysicists and petroleum engineers in their biennial assessment of remaining U.S. natural gas resources. He teaches petroleum geology, petroleum geochemistry, integrated exploration and petroleum design at the Colorado School of Mines, where he also supervises graduate student research.

Katy Dunlap — is the Eastern Water Project Director for Trout Unlimited (TU), the nation’s largest coldwater conservation organization, with 140,000 members dedicated to conserving, protecting, and restoring North America’s trout and salmon fisheries and their watersheds. Ms. Dunlap works at the state level to develop new or change existing instream flow policies throughout the Northeast region, as well as organizes TU members and local communities around a host of water management issues including those related to Marcellus Shale. Before joining TU, she was the Executive Director of the Hudson River Watershed Alliance, a five-state alliance working to build the capacity of local watershed groups to advocate for sound water resource management and policies. Throughout her legal career, Ms. Dunlap has focused on water resource policies and watershed law in the Northeast and the Northwest.

Ms. Dunlap received her B.S. in Environmental Science, Policy & Management from the College of Environmental Science & Forestry at Syracuse University in 1993. She earned her Juris Doctor and Masters in Environmental Law from Vermont Law School in 2000. Ms. Dunlap lives and works in the Finger Lakes region of New York State.

Will Fleckenstein — graduated from the Colorado School of Mines with Bachelors and Masters degrees in Petroleum Engineering in 1986 and 1988. He worked as a roughneck on drilling rigs, then worked for seven years at the Elk Hills Naval Petroleum Reserve in California, primarily as a drilling engineer and well-site supervisor designing and supervising drilling, completions and workovers on hundreds of wells using conventional and coiled tubing rigs, including work on numerous shale reservoirs.

Dr. Fleckenstein returned to the Colorado School of Mines in 1995, receiving a PhD in Petroleum Engineering in 2000. He has continued consulting in the petroleum industry in multiple basins internationally and domestically, teaches industry schools, and has served as an expert witness on a variety of matters, including intellectual property issues. In 2000, Dr. Fleckenstein was appointed an Adjunct Professor at CSM and serves as the Director of the PERFORM Research Group, with 24 publications to his credit. He has been a Registered Engineer since 1991. In 2009 Dr. Fleckenstein was named the British Petroleum Adjunct Professor and is currently pursuing several patents on completion technology for use in shale resource plays. He also serves as the Chairman of the Board of the Credit Union of Colorado, a financial institution with nearly one billion dollars in assets.

Michelle Michot-Foss — directs and conducts research, specializing in the energy value chains and associated investment frameworks. She advises US and international energy companies; publishes and speaks widely on energy issues; and provides public commentary and testimony to governments. Her areas of emphasis include upstream/midstream natural gas and LNG, upstream oil, CCS and climate economics, electric power generation fuels, national oil companies, energy scenarios and outlooks. She directs two major research programs: the CENTER FOR ENERGY ECONOMICS’ (CEE’s)
[of the Bureau of Economic Geology at the University of Texas at Austin] US Agency for International Development cooperative agreement, *Smart Development in Energy Sector Governance* (currently in West Africa) and CEE’s research program on national oil companies, including World Bank collaboration. She also founded and directs CEE’s international capacity building program, *New Era in Oil, Gas & Power Value Creation*.

In addition to Texas and the US, Dr. Michot-Foss and CEE team members have experience in Canada and Mexico; South America; Russia and the Caspian; Western Europe and Turkey; Africa; and East Asia. Dr. Michot-Foss has been appointed to the National Academy of Sciences (NAS) Committee on Earth Resources and to the National Petroleum Council’s North American Natural Gas and Oil Resources Demand Study Group and has served on the advisory board for the Moratoria Study Group hosted by the National Association of Regulatory Utility Commissioners (NARUC, study released in February 2010).

In 2006, Dr. Michot-Foss was chosen a Senior Fellow by the US Association for Energy Economics for her contribution to the profession and association. She was selected one of the Key Women in Energy-Americas (2003). She was the 2003 president of the International Association for Energy Economics (IAEE) and 2001 president of the USAEE. She is a member of the Council on Foreign Relations; past board member and current education board member of the Association of International Petroleum Negotiators (AIPN); was recognized by the Scientific Council, 50th Anniversary of ENI Commemorative Encyclopedia of Hydrocarbons. She serves on the advisory boards of the Consumer Energy Alliance, the Institute for Energy in the 21st Century (US Chamber of Commerce), and the Women’s Global Leadership Conference in Energy & Technology – and she serves on the editorial boards of the AIPN/Oxford Press *Journal of World Energy Law & Business* and the *International Journal of Regulation and Governance*.

She holds degrees from University of Louisiana-Lafayette, Colorado School of Mines, and University of Houston. CEE-UT is a non-contributory member of the Society of International Gas Tanker and Terminal Operators (SIGTTO) and GridWise Alliance. CEE-UT was named a finalist in the World Oil Awards competition for best outreach program in both 2006 and 2007.

**Avi Samuel Garbow** — was appointed by President Obama in September 2009, to serve as the Environmental Protection Agency’s Deputy General Counsel. With nearly two decades of environmental law experience – in the private and public sectors – Garbow is primarily engaged in the significant legal and related policy issues confronting the Agency in its media programs, including air, water, waste, and toxics.

From 1992 to 1996, Garbow served in EPA’s Office of Enforcement and Compliance Assurance, and then served with distinction as a federal prosecutor in the Department of Justice Environmental Crimes Section. In private practice, he was a litigation partner and junior partner at two major international firms. Garbow has served on the boards of directors, and in other capacities, for various environmental and international human rights organizations, and previously held leadership positions in the American Bar Association’s International Human Rights Committee. He is the recipient of the University of Virginia School of Law’s Robert F. Kennedy Award for Public Service, holds a Masters Degree in Marine Affairs, and is a former volunteer firefighter.
John R. Jacus — is a partner with the Denver firm of Davis Graham & Stubbs LLP, and is a member of the firm’s Environmental Practice Group, as well as its Alternative and Renewable Energy Practice Group. He represents clients under all major federal and state environmental laws and regulatory programs, including the Clean Air Act, RCRA, CERCLA, and the Clean Water Act. His practice includes environmental litigation, administrative proceedings and representation in complex business transactions, including conventional and renewable energy projects. He is experienced in rule-making and adjudicatory proceedings, permitting, litigation for cost recovery, citizen suits and environmental insurance coverage, and the judicial appeal of adverse agency actions.

Mr. Jacus’ environmental practice has emphasized the unique legal and operational requirements applicable to the oil and gas, mining and other natural resources industries, in particular. He has been heavily involved in rulemaking and enforcement defense proceedings involving air quality regulation of stationary sources in oil and gas exploration and production, including the promulgation of standards to control emissions of nitrogen oxides and volatile organic compounds, as well as the required reporting of Greenhouse Gases (GHGs). He also has expertise in the regulation of special wastes under the Resource Conservation and Recovery Act (RCRA) and related state laws, including oil and gas exploration and production (E&P) wastes, and so-called “Bevill” mining wastes exempt from RCRA hazardous waste regulation.

Mr. Jacus has authored numerous articles on subjects ranging from the transport of hazardous waste to adoption of corporate environmental policies, in various publications of the ABA, the Colorado Bar Association and the Rocky Mountain Mineral Law Foundation, among others. He has been listed in the International Who’s Who of Environment Lawyers since 2004 (1st Edition, Who’s Who Legal), was recognized in 2006 and each year since by The Best Lawyers in America in the Environmental category, and is also peer-rated “AV” through Martindale Hubbell.

Mr. Jacus is a former Chair of the Environmental Law Section, Colorado Bar Association (1996-1997), a former member of the ABA Section of Environment, Energy & Resources (SEER) Council (1995-1998 and 2009-2010), a former Chair of SEER’s State and Regional Environmental Cooperation Committee (SRECC, 2008-2010) and former Co-Chair of the State and Local Bar Outreach Task Force of SEER (2009-2010). Mr. Jacus also was co-chair of the Section’s Annual Conference on Environmental Law (f/k/a the Keystone Conference) from 1993 to 1996, and served as the Environmental Program Chair of the 44th Annual Rocky Mountain Mineral Law Institute in 1998.

Judy Jordan — is the oil and gas liaison for Garfield County, Colorado, which has been experiencing a natural gas development boom since about 2004. She works with energy operators, government agencies and the public to facilitate education and dialogue on various energy issues, such as production levels, constituent complaints, and environmental impacts. She has overseen the County’s investigations of water quality in the Mamm Creek gas field, which was the scene of a natural gas release to West Divide Creek in 2004. Early in her career as a hydrogeologist, Judy managed Delaware’s Groundwater Quality Program, where she wrote the State’s first Wellhead/Source Water Protection Plan. Later positions included serving a hydrogeologist for DuPont and a Superfund lawyer for the Pennsylvania DEP. Immediately prior to the oil and gas liaison position, she was the executive director of the Pennsylvania Organization for Watersheds & Rivers. Judy earned her BA in Geology from the University of Delaware and her JD from Widener University School of Law.
**Bruce Kramer** — received his B.A. in International Relations from UCLA and a J.D. from the UCLA School of Law. He received an LL.M. in Environmental and Natural Resources Law from the University of Illinois College of Law. From 1974 through his retirement as the Maddox Professor of Law Emeritus in 2006, Professor Kramer taught at the Texas Tech University School of Law. Since his retirement, he has been serving as Adjunct Professor at the University of Colorado Law School. Since 2006 he has been of counsel to the Houston- and Austin-based firm of McGinnis, Lochridge & Kilgore.

Professor Kramer has been the author or co-author of over 60 law review articles. He has also spoken at over 75 continuing legal education programs. He is the co-author of *The Law of Pooling and Unitization* (3rd ed) and *Williams and Meyers Oil and Gas Law* (since 1996). He is also the co-author of the sixth through eighth editions of *Cases and Materials on Oil and Gas Law* and will soon be the co-author of the ninth edition when it is published in 2011.

Professor Kramer is most proud of the fact that all of his daughters have graduated from college debt-free and that his wife of many years, Marilynn, still talks to him.

**John Martin** — a partner with Crowell & Moring, LLP – Washington, DC, represents clients in complex litigation involving natural resources and environmental issues. He has litigated a number of cases under various environmental laws including the National Environmental Policy Act, the Endangered Species Act, the Clean Air Act, the Clean Water Act, and Superfund. He has developed a particular focus on the application of environmental regulation to the energy industry. In addition to federal district court litigation, John has argued several cases before the U.S. Courts of Appeals, including both appeals and regulatory matters. He represents clients before the Interior Board of Land Appeals and in administrative proceedings at the Environmental Protection Agency. Early in his career, John served as an attorney in the Solicitor's Office at the Department of the Interior and, later, as a trial lawyer with the Lands and Natural Resources Division of the Department of Justice. At DOJ, John litigated cases under the Comprehensive Environmental Response, Compensation, and Liability Act, the Clean Air Act, and the Clean Water Act, and received a Special Achievement Award from the Department of Justice.

John has contributed to various publications, and has served as co-author to three environmental law texts. He is also a frequent speaker on various environmental and natural resource topics. His undergraduate degree (with honors) is from the University of Wyoming (1975) and his JD is from Georgetown University Law Center (1979). John is admitted to practice in the District of Columbia; Wyoming; U.S. Supreme Court; U.S. Courts of Appeals for the District of Columbia, 5th, 6th, 8th, 9th and 10th Circuits; U.S. District Courts for the District of Columbia and Wyoming. His publications include:

Richard Nehring — has been President of Nehring Associates in Colorado Springs since he founded the company in 1983. During this period, he designed the Significant Oil and Gas Fields of the United States Database and its subsequent expansions and directed the initial development and subsequent updates, upgrades, and expansions of the database. Since the initial release of the database in 1985, Mr. Nehring has written more than 25 papers and presentations using the database.

Since 1980, Mr. Nehring has served on numerous professional and scientific committees dealing with oil and gas resource and supply issues, including three National Petroleum Council task groups and four National Research Council Committees. He has been a member of AAPG's Committee on Resource Evaluation since its founding in 1993. He was Chairman and organizer of the AAPG Hedberg Research Conference on Understanding World Oil Resources in November 2006.

Prior to founding Nehring Associates, Mr. Nehring was project director of fossil fuel supply issues for the Energy Policy Program of The RAND Corporation for ten years. His major studies during this decade covered giant oil fields and world oil resources; the discovery history and size distribution of U.S. oil and gas fields and their implications for ultimate resources; the heavy oil resources of the United States; and Mexico's petroleum and U.S. policy.

David Neslin — is the Director of the Colorado Oil and Gas Conservation Commission, which regulates oil and gas development in the State. During his tenure, the Commission has undertaken the first comprehensive updating of its rules in more than a decade, substantially expanded its staff, and issued a record number of drilling permits.

From 2007 until early 2009, David was also the Assistant Director for Energy and Minerals for the Colorado Department of Natural Resources. In that capacity, he worked with the Oil and Gas Conservation Commission, the Division of Reclamation, Mining and Safety, the Geological Survey, and other state agencies regarding energy and mineral development in Colorado. Prior to joining the Department in 2007, David spent 24 years as an associate and partner in the international law firm of Arnold & Porter, LLP. At Arnold & Porter, he represented clients in a wide range of complex litigation matters, including environmental permitting disputes, government contracts claims, government enforcement actions, real estate disputes, and products liability litigation. He also assisted clients in obtaining numerous environmental, land use, and other regulatory approvals. In recent years, his clients included ski resorts, real estate developers, public utilities, local governments, Indian tribes, and mining, oil and gas, and pharmaceutical companies.

David has written and lectured on wetlands regulation, threatened and endangered species, the National Environmental Policy Act, the Clean Water Act, and other environmental issues. He is a graduate of the University of Washington and the University of Washington Law School.

Jeremy Nichols — is the Climate and Energy Director for WildEarth Guardians, a nonprofit dedicated to protecting and restoring wildlife, wild places, and wild rivers in the American West. Jeremy has been active in conservation advocacy since 2000, when he first started working with Biodiversity Conservation Alliance to protect forests, grasslands, and imperiled species in Wyoming and the Black Hills of South Dakota. In 2006, he founded and led Rocky Mountain Clean Air Action, a nonprofit that successfully held polluters, states, and the Environmental Protection Agency accountable to our clean air laws throughout the Rocky Mountain region. A native to Idaho, Jeremy made his way to the Rocky Mountain west to study geology at the University of Wyoming.
**Mark Squillace** — is Professor of Law and the Director of the Natural Resources Law Center at the University of Colorado Law School. He teaches environmental law, water law, administrative law, and advanced natural resources law. Before coming to Colorado, Professor Squillace taught at the University of Toledo College of Law where he was the Charles Fornoff Professor of Law and Values, and at the University of Wyoming College of Law where he served a three-year term as the Winston S. Howard Professor of Law.

In 2000, Professor Squillace took a leave from law teaching to serve as Special Assistant to the Solicitor at the U.S. Department of the Interior. In that capacity he worked directly with the Secretary of the Interior, Bruce Babbitt, on variety of legal and policy issues. Professor Squillace previously served as the Director of Litigation for the Environmental Policy Institute in Washington, DC and for three years was Attorney Advisor for the Office of the Solicitor, U.S. Department of the Interior. He has provided testimony before Congress on the *Consolidated Land, Energy, and Aquatic Resources Act of 2009* (Sept. 17, 2008); “*How Should the Federal Government Address the Health and Environmental Risks of Coal Combustion Waste?*” (June 10, 2008); and *The Clean Water Restoration Act of 2007*, H.R. 2421 (April 16, 2008).

Mark is a former Fulbright scholar and the author or co-author of numerous articles and books on natural resources and environmental law including (with J. Rasband & J. Salzman), *Natural Resources Law and Policy* (2nd ed, 2008).

**Randy Udall** — former director of the Community Office for Resource Efficiency (CORE), is one of the nation’s leading activists in promoting energy sustainability. CORE's partnerships with electric utilities and local governments have led to remarkable accomplishments, including Colorado’s first solar energy incentive program, the world's first Renewable Energy Mitigation Program which has raised $7 million, and some of the most progressive green power purchasing programs in the country.

Udall is co-founder of the Association for the Study of Peak Oil-USA and has keynoted annual conferences for the Rocky Mountain Electric League and American Wind Energy Association. In recent months he has addressed the Nebraska Municipal Power Pool, Colorado Rural Electric Association, Colorado Association of Municipal Utilities, Utah Association of Municipal Utilities, and the Northern California Power Association. Udall was recently featured in a CNBC documentary *The Hunt for Black Gold.*