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TO: David Guzy at ~mms-denver-85-1
Subject: Comments on Supplementary Rule

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Please accept the attached as submitted comments on the MMS's Supplementary Proposed Rule to Establishing Oil Value for Royalty Due on Federal Leases, and on Sale of Federal Royalty Oil, (62 Fed. Reg. 36030)

A hard copy will arrive at your office via Federal Express tomorrow, August 4, 1995.

If you have questions, please contact me at:

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Thank you.

**BEFORE THE
UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE**

**Establishing Oil Value for Royalty Due on Federal Leases,
and on Sale of Federal Royalty Oil**

Supplemental Comments of

JOSEPH P. KALT
Harvard University and The Economics Resource Group, Inc.

KENNETH W. GRANT
The Economics Resource Group, Inc.

August 4, 1997

I. INTRODUCTION AND BACKGROUND

Joseph P. Kalt is a Senior Economist and Kenneth W. Grant is a Consultant with The Economics Resource Group, Inc. (ERG), a private consulting firm located in Cambridge, Massachusetts. Our business address is One Mifflin Place, Cambridge, MA 02138. In addition to his affiliation with ERG, Prof. Kalt is the Ford Foundation Professor of International Political Economy at Harvard University's John F. Kennedy School of Government. Copies of our curriculum vitae are attached as Exhibit A to these comments.

We are submitting these comments in response to the Supplementary Proposed Rule regarding *Establishing Oil Value for Royalty Due on Federal Leases, and on Sale of Federal Royalty Oil* issued by the Minerals Management Service ("MMS") of the

Department of the Interior (“DOI”) on July 3, 1997 and published at 62 Fed. Reg. 36030. These comments are made on behalf of Amerada Hess Corp.; Amoco Production Co.; Chevron U.S.A., Inc.; Conoco, Inc.; Exxon Corporation; Marathon Oil Co.; Mobil Oil Corp.; Mobil Producing Texas & New Mexico, Inc.; Phillips Petroleum Co.; Shell Western E&P Inc.; Texaco Exploration & Production, Inc.; Texaco Trading & Transportation, Inc.; and Union Pacific Resources Co. These parties have retained the services of the authors in connection with pending litigation in a number of matters involving crude oil pricing and royalty payments.

As noted in the Comments of Joseph P. Kalt to the MMS’s Notice of Proposed Rulemaking in the same proceeding (dated May 27, 1997), we have acquired extensive data and evidence regarding the posting of crude oil prices, crude oil transactions at leases and at downstream trading centers, the nature and economic functions of the various types of transactions utilized by various market participants, and royalty payments by crude oil working interest owners in the U.S.

II. ANALYSIS AND FINDINGS

The Supplementary Proposed Rule proposes a new paragraph (a) (6) to address royalty payments on crude oil disposed of under certain exchanges.¹ In the original proposed rule, all exchanges, be it between affiliated or third-parties, would be valued under MMS’s proposed index-pricing method. The Supplementary Proposed Rule, in contrast, distinguishes between exchanges made between affiliates and exchanges made between third-parties. The former would still be assessed royalties under the proposed

¹ The term “exchanges” is assumed to include all such similarly economic transactions, such as buy-sells.

index method. The latter would have the ability to choose to pay royalties on either the index methodology or net proceeds on the subsequent downstream arm's-length sale, adjusted for location and quality differences negotiated under the arm's-length exchange agreement.

In connection with our retention for expert analysis on behalf of the aforementioned parties, we have conducted an extensive examination of the domestic market that exists for crude oil at the lease level. This research bears directly on the changes proposed by the supplementary rule.

II.A Exchanges Serve Legitimate Economic Functions

The basis for the supplemental and original proposed rules rests, in part, on the MMS's belief that "the wide spread use of exchange agreements and reciprocal sales...cast doubt on the usefulness of many apparent arm's-length sales prices as a good measure of market value." (Notice of Proposed Rule, 62 Fed. Reg. 3744) That is, given the observation that NYMEX/trade center prices less certain quality and/or location differentials may exceed prices occurring in outright, cash transactions at lease, the MMS concludes that "the contract price for oil subject to an exchange agreement...may not reflect value." (Notice of Proposed Rule, 62 Fed. Reg. 3744) Thus, the MMS would not accept such prices for the purposes of payment of obligations arising from Federal royalties.

This reasoning suggests serious misunderstanding regarding the legitimate economic use and functions of exchanges. Exchanges, and related buy/sell transactions, offer a valuable mechanism by which crude oil can be efficiently "transported" between market participants. That is, such arm's-length transactions facilitate the efficient

downstream marketing and movement of crude oil from one location to another. A substitute for physical transportation, they offer a legitimate mechanism by which the market may more efficiently match sellers' supplies of particular types of crude oil at particular locations with buyers' needs.

Lease-level posted prices commonly serve as the basis for valuing crude oil in exchanges and buy/sell transactions. As explained in the Comments of Prof. Kalt in response to the MMS's original Notice of Proposed Rulemaking in this matter, data on hundreds of thousands of arm's-length outright transactions at crude oil leases in the U.S. indicate that there is a very active market in outright purchases and sales at the lease. Moreover, posted prices quite consistently lie within the range of values spanned by outright transactions prices. Accordingly, posted prices cannot be reasonably rejected as representative of market value. The MMS errs in doing so.

II.B Exchanges Involve Downstream Value -Adding Functions

The belief that "market value" is not being captured at the lease clearly underscores the MMS' rejection of the first sales price in exchange transactions as a basis upon which to calculate royalties owed on crude oil produced from Federal lands. To rectify this situation, the MMS specifically proposes to assess royalties on the "back end" of such transactions, i.e., either the relevant trade center price or first outright arm's-length transaction after the initial exchange less the specified quality and/or location differentials.

In so doing, the MMS fails to recognize that such transactions contain the value-adding functions of marketing, which occur downstream from the lease. That is, exchanges, by the nature of such transactions, incorporate both the value of crude oil

extracted from reservoirs plus value added by marketing services that go into setting up and carrying out exchanges. Thus, the difference between the adjusted trade center price (\$19.75) and downstream “buy” price (base price + \$0.25) contained in the example offered by the MMS in the Supplementary Proposed Rule represents the return to the producer for arranging transactions to market their crude oil downstream of the lease and for assuming attendant costs and risks associated with engaging in these reseller’s functions.² (Supplementary Proposed Rule, 62 Fed Reg 36031).

The fallacy in MMS’s thinking, as implied by the aforementioned example, is the unstated assumption that any subsequent price gap between the adjusted trade center price and prices struck at the lease in outright cash transactions contains some risk-free return able to be captured by any party wishing to participate in such downstream transactions. Properly construed, however, the difference represents the return to “middleman” functions, which involve the acceptance and active management of the costs and risks of putting together and carrying out exchanges. These risks are substantial and include risks of price changes between production and arrangement of the exchanges, risk of environmental liability, and search and transactions costs³

III. Conclusion

The proposed supplementary rule further underscores the need on the part of the MMS to undertake a more systematic and analytic study of the economic implications and functions served by the various transactions utilized by the market in the purchase

² For a more complete list of such costs and risks, see the Comments of Joseph P. Kalt (submitted May 27, 1997).

³ See, for example, the Comments BHP Petroleum (Americas) Inc. and Burk Royalty Co. (submitted May 23, 1997, and April 24, 1997, respectfully).

and disposition of domestically produced crude oil. Specifically, the Proposed Supplementary Rule reveals a failure to understand legitimate economics functions of exchanges and related transactions and their downstream marketing components. As currently drafted, the proposed rule simply further complicates the original rulemaking and its deleterious potential effects on the market for domestic crude oil.

Respectfully submitted,

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Co-Director, The Harvard Project on American Indian Economic Development, 1987 - present

Academic Dean for Research, 1992 - 1994

Chairman, Environment and Natural Resources Program, Center for Science and International Affairs, 1990 - 1994

Chairman of Degree Programs, 1990 - 1992

Assistant Director for Natural Resources, Energy and Environmental Policy Center, 1985 - 1990

Co-Director, Harvard Study on the Future of Natural Gas Policy (with Frank C. Schuller), Energy and Environmental Policy Center, John F. Kennedy School of Government, 1984-86

Department of Economics, Harvard University, Cambridge, MA

Associate Professor of Economics, 1983 - 1986

Assistant Professor of Economics, 1980 - 1983

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Taught Economics of Antitrust and Regulation, Intermediate Microeconomics, and Principles of Economics.

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Analyzed federal energy, environmental, transportation, and tax policies.

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University of California, Los Angeles

Ph.D. in Economics, 1980

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M.A. in Economics, 1977

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PUBLICATIONS AND RESEARCH: RESEARCH REPORTS AND MONOGRAPHS

"Successful Economic Development and Heterogeneity of Governmental Form on American Indian Reservations" (with Stephen Cornell), Harvard Project on American Indian Economic Development, John F. Kennedy School of Government, October 1995.

"Politics Versus Policy in the Restructuring Debate," The Economics Resource Group, Inc., funded by Northeast Utilities System Companies, June 1995.

"Indexing Natural Gas Pipeline Rates" (with Amy B. Candell, Sheila M. Lyons, Stephen D. Makowka, and Steven R. Peterson), The Economics Resource Group, Inc., April 1995.

"An Economic Analysis of Electricity Industry Restructuring in New England" (with Adam B. Jaffe), The Economics Resource Group, Inc., funded by Northeast Utilities System Companies, April 1995.

"Precedent and Legal Argument in U.S. Trade Policy: Do They Matter to the Political Economy of the Lumber Dispute?" Faculty Research Working Paper Series, John F. Kennedy School of Government, Harvard University, September 1994.

"Oversight of Regulated Utilities' Fuel Supply Contracts: Achieving Maximum Benefit from Competitive Natural Gas and Emission Allowance Markets" (with Adam B. Jaffe), The Economics Resource Group, Inc., funded by Enron Gas Services Corporation, April 1993.

"Incentives and Taxes: Improving the Proposed BTU Tax and Fostering Competition in Electric Power Generation," Harvard University and The Economics Resource Group, Inc., March 10, 1993.

"An Assessment of the Impact of the PT Chandra Asri Petrochemical Project on Indonesia's Economy" (with Henry Lee, Dr. Robert Lawrence, Dr. Ronald M. Whitefield, and Bradley Blesie), The Economics Resource Group, Inc., December 1991.

"The Federal Energy Regulatory Commission's Proposed Policy Statement on Gas Inventory Charges (PL 89-1-000)" (with Charles J. Cicchetti and William W. Hogan), *Discussion Paper Series*, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, July 1989.

"The Redesign of Rate Structures and Capacity Auctioning in the Natural Gas Pipeline Industry," *Discussion Paper Series*, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, June 1988.

"The Redefinition of Property Rights in American Indian Reservations: A Comparative Analysis of Native American Economic Development," *Discussion Paper Series*, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, June 1987

"A Review of the Adequacy of Electric Power Generating Capacity in the United States, 1985-93 and 1993-Beyond" (with James T. Hamilton and Henry Lee), *Discussion Paper Series*. Energy and Environmental Policy Center. John F. Kennedy School of Government, Harvard University, June 1986.

"Energy Issues in Thailand: An Analysis of the Organizational and Analytical Needs of the Thailand Development Research Institute," Harvard Institute for International Development, March 1986.

"Possibilities for Competition in the Gas Industry: The Roles of Market Structure and Contracts," prepared for Harvard Study on the Future of Natural Gas Policy, Working Group Meeting, October 1985.

"Natural Gas Decontrol, Oil Tariffs, and Price Controls: An Intertemporal Comparison," Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, April 1985.

"Market Structure, Vertical Integration, and Long-Term Contracts in the (Practically) Deregulated Natural Gas Industry," *Discussion Paper Series*, Harvard Institute of Economic Research, Harvard University, April 1985.

"Can a Consuming Region Win under Gas Decontrol?: A Model of Income Accrual, Trade, and Stockholding" (with Robert A. Leone), *Discussion Paper Series*, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, February 1984.

"Natural Gas Decontrol: A Northwest Industrial Perspective" (with Susan Bender and Henry Lee), *Discussion Paper Series*, John F. Kennedy School of Government, Harvard University, November 1983.

"Natural Gas Decontrol: A Northeast Industrial Perspective" (with Henry Lee and Robert A. Leone), *Discussion Paper Series*, John F. Kennedy School of Government, Harvard University, October 1982.

"Television Industry Self-Regulation: Protecting Children from Competition in Broadcasting" (with George J. Holder), Harvard Institute of Economic Research, Discussion Paper No. 896, April 1982.

“The Use of Political Pressure as a Policy Tool During the 1979 Oil Supply Crisis” (with Stephen Erfle and John Pound), *Discussion Paper Series*, John F. Kennedy School of Government, Harvard University, April 1981.

“Problems of Minority Fuel Oil Dealers” (with Henry Lee), *Discussion Paper Series*, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, April 1981.

OTHER PUBLICATIONS

“American Indian Economic Development,” *Tribal Pathways Technical Assistant Program Newsletter*, February 1997, p. 3.

Statement to U.S. Congress, Joint Economic Committee, Subcommittee on Trade, Productivity and Economic Growth, *The Economic Impact of Lower Oil Price*, Hearing of March 12, 1986.

“A Harvard Professor Looks at the Effects of Allowing U.S. Hunters to Import Polar Bear Trophies,” *Safari Times*, April 1994.

“Administration Backsliding on Energy Policy” (with Peter Navarro), *Wall Street Journal*, editorial page, February 9, 1982.

Statement to the Energy and Natural Resources Committee, U.S. Senate, *Government Responses to Oil Supply Disruptions*, Hearing of July 28-29, 1981, U.S. Government Printing Office, 1981, pp. 623-630 and 787-801.

“Staff Report on Effects of Restrictions on Advertising and Commercial Practice in the Professions: The Case of Optometry,” Ronald S. Bond, *et al.*, Executive Summary, Bureau of Economics, Federal Trade Commission, September 1980.

“Redistribution of Wealth in Federal Oil Policy,” *San Diego Business Journal*, August 18, 1980, pp. 22-3.

“The Energy Crisis—Moral Equivalent of Civil War” (with Peter Navarro), *Regulation*, January/February 1980, pp. 41-43.

“Windfall Profits Tax Will Reap Bonanza—But For Whom?” (with Peter Navarro), *The Miami Herald*, December 23, 1979, editorial page.

PAPERS PRESENTED

Proceedings of the Fourth Annual DOE-NARUC Natural Gas Conference, Orlando, FL, February 1995, publication forthcoming.

Keynote Address, "Sovereignty and American Indian Economic Development," Arizona Town Hall, Grand Canyon, AZ, October 1994.

"Is the Movement Toward a Less-Regulated, More Competitive LDC Sector Inexorable?, (Re)Inventing State/Federal Partnerships: Policies for Optimal Gas Use," U.S. Department of Energy and The National Association of Regulatory Utility Commissioners Annual Conference, Nashville, TN, February 1994.

"Cultural Evolution and Constitutional Public Choice: Institutional Diversity and Economic Performance on American Indian Reservations," Festschrift in Honor of Armen A. Alchian, Western Economic Association, Vancouver, BC, July 1994.

"Precedent and Legal Argument in U.S. Trade Policy: Do they Matter to the Political Economy of the Lumber Dispute?" National Bureau of Economic Research, Conference on Political Economy of Trade Protection, February, September 1994.

"The Redesign of Rate Structures and Capacity Auctioning in the Natural Gas Pipeline Industry," Natural Gas Supply Association, Houston, TX, March 1988.

"Property Rights and American Indian Economic Development," Pacific Research Institute Conference, Alexandria, VA, May 1987.

"The Development of Private Property Markets in Wilderness Recreation: An Assessment of the Policy of Self-Determination by American Indians," Political Economy Research Center Conference, Big Sky, MT, December 4-7, 1985.

"Lessons from the U.S. Experience with Energy Price Regulation," International Association of Energy Economists Delegation to the People's Republic of China, Beijing and Shanghai, PRC, June 1985.

"The Impact of Domestic Regulation on the International Competitiveness of American Industry," Harvard/NEC Conference on International Competition, Ft. Lauderdale, FL, March 7-9, 1985.

"The Welfare and Competitive Effects of Natural Gas Pricing," American Economic Association Annual Meetings, December 1984.

"The Ideological Behavior of Legislators," Stanford University Conference on the Political Economy of Public Policy, March 1984.

“Principal-Agent Slack in the Theory of Bureaucratic Behavior,” Columbia University Center for Law and Economic Studies, 1984.

“The Political Power of the Underground Coal Industry,” FTC Conference on the Strategic Use of Regulation, March 1984.

“Decontrolling Natural Gas Prices: The Intertemporal Implications of Theory,” International Association of Energy Economists Annual Meetings, Houston, TX, November 1981.

“The Role of Government and the Marketplace in the Production and Distribution of Energy,” Brown University Symposium on Energy and Economics, March 1981.

“A Political Pressure Theory of Oil Pricing,” Conference on New Strategies for Managing U.S. Oil Shortages, Yale University, November 1980.

“The Politics of Energy,” Eastern Economic Association Annual Meetings, 1977.

WORKSHOPS PRESENTED

University of Indiana; University of Montana; Oglala Lakota College; University of New Mexico; Columbia University Law School; Department of Economics and John F. Kennedy School of Government, Harvard University; MIT; University of Chicago; Duke University; University of Rochester; Yale University; Virginia Polytechnic Institute; U.S. Federal Trade Commission; University of Texas; University of Arizona; Federal Reserve Bank of Dallas; U.S. Department of Justice; Rice University; Washington University; University of Michigan; University of Saskatchewan; Montana State University; UCLA; University of Maryland; National Bureau of Economic Research; University of Southern California

OTHER PROFESSIONAL ACTIVITIES

Chief Mediator *In the Matter of the White Mountain Apache Tribe v. United States Fish and Wildlife Service*, re: endangered species management authority, May-December, 1994

Steering Committee, National Park Service, 75th Anniversary Symposium, 1991-93

Board of Trustees, Foundation for American Communications, 1989 to present

Editorial Board, *Economic Inquiry*, 1988 to present

Advisory Committee, Oak Ridge National Laboratory, Energy Division, 1987 to 1989

Commissioner, President's Aviation Safety Commission, 1987-88

Principal Lecturer in the Program of Economics for Journalists, Foundation for American Communications, teaching economic principles to working journalists in the broadcast and print media, 1979 to present

Lecturer in the Economics Institute for Federal Administrative Law Judges, University of Miami School of Law, 1983 to 1991

Research Fellow, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, 1981 to 1987

Editorial Board, MIT Press Series on *Regulation of Economic Activity*, 1984 to 1992

Research Advisory Committee, American Enterprise Institute, 1979 to 1985

Editor, *Quarterly Journal of Economics*, 1979 to 1984

Referee for *American Economic Review*, *Bell Journal of Economics*, *Economic Inquiry*, *Journal of Political Economy*, *Review of Economics and Statistics*, *Science Magazine*, *Journal of Policy Analysis and Management*, *Social Choice and Welfare*, *Quarterly Journal of Economics*, MIT Press, North-Holland Press, Harvard University Press, *American Indian Culture and Research Journal*

TEACHING EXPERIENCE

Introduction to Environment and Natural Resource Policy (Graduate, Kennedy School of Government); Seminar in Positive Political Economy (Graduate, Kennedy School of Government); Intermediate Microeconomics (Graduate, Kennedy School of Government); Natural Resources and Public Lands Policy (Graduate, Kennedy School of Government); Economics of Regulation and Antitrust (Graduate); Economics of Regulation (Undergraduate); Introduction to Energy and Environmental Policy (Graduate, Kennedy School of Government); Graduate Seminar in Industrial Organization and Regulation; Intermediate Microeconomics (Undergraduate); Principles of Economics (Undergraduate); Seminar in Energy and Environmental Policy (Graduate, Kennedy School of Government)

HONORS AND AWARDS

Allyn Young Prize for Excellence in the Teaching of the Principles of Economics, Harvard University, 1978-79 and 1979-80

Chancellor's Intern Fellowship in Economics, 9/73 to 7/78, one of two awarded in 1973, University of California, Los Angeles

Smith-Richardson Dissertation Fellowship in Political Economy, Foundation for Research in Economics and Education, 6/77 to 9/77, UCLA

Summer Research Fellowship, UCLA Foundation, 6/76 to 9/76

Dissertation Fellowship, Hoover Institution, Stanford University, 9/77 to 6/78

Four years of undergraduate academic scholarships, 1969-1973; graduated with University Distinction and Departmental Honors, Stanford University

Research funding sources have included: The National Science Foundation; USAID (IRIS Foundation); Pew Charitable Trust; Christian A. Johnson Family Endeavor; The Ford Foundation; The Northwest Area Foundation; the U.S. Department of Energy; the Research Center for Managerial Economics and Public Policy, UCLA Graduate School of Management; the MIT Energy Laboratory; Harvard's Energy and Environmental Policy Center; the Political Economy Research Center; the Center for Economic Policy Research, Stanford University; the Federal Trade Commission; and Resources for the Future

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PROFESSIONAL EXPERIENCE

The Economics Resource Group, Inc., Cambridge, MA
Consultant, 1993 - present

Provides economic analysis in areas of market analysis, antitrust, finance, and in ERG's special services in support of Native American economic development and self-governance. Past work has included projects in the crude oil, international timber, natural gas and electricity industries.

Overseas Private Investment Corporation, Washington, DC
Economist, Summer 1992

Analyzed trade and trade-related benefits of foreign investments. Work included conducting market analyses and researching employment effects and capital requirements of proposed projects. Industrial sectors included automobile and shoe manufacturing and production of carbon black.

Harvard Institute for International Development, Cambridge, MA
Instructor, Summer 1993

Taught cost-benefit analysis, project analysis, and microeconomics; worked with mid-level officials from utilities, regulatory agencies, and economic development banks in the developing world.

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA
Selected courses in business and graduate microeconomics, 1995-96

John F. Kennedy School of Government, Harvard University, Cambridge, MA
M.P.P., 1993
Thesis: "A Foundation for Economic Development for the Hualapai Nation:
Building an Enterprise Board"

Middlebury College, Middlebury, VT
B.A. *cum laude* in Economics, 1986

SELECTED CONSULTING EXPERIENCE

Union Oil Company of California and Shell Oil Company (Baker & Hostetler/Jackson & Kelly)

Principal consultant responsible for assessing and responding to the economic implications and content of the U.S. Department of Interior Minerals Management Service's methodology for the valuation of crude oil produced from onshore and offshore leases in California. Primary research included value determination of a commodity at different points in the chain of production, transportation economics within a given market, and the economic implications of trading practices, contract structures, and vertical integration, particularly as they pertain to the California crude oil market. Analysis and draft testimony was prepared on behalf of Union Oil Company of California and Shell Oil Company *Before the Department of Interior Minerals Management Service, RB-6-20204.001*. (spring 1997)

Crow Tribe (Fredericks, Pelcyger, Hester & White)

Part of a team which assessed the impact of tourism on the Crow Reservation and specifically, the impact on the public services and governmental activities provided by the tribe and its trustee agents in support of the tourism industry located within the confines of the reservation. Analysis and report were prepared in support of a legal challenge to the tribe's imposition of a gross receipts tax on the goods and services sold or used on the Crow Reservation in connection with a resort business *In the Matter of Gordon Rose, et al. v. Denis Adams, Crow Tribal Court, Cause No. 95-207*. (spring 1997)

Consortium of Major United States Oil Companies (Kirkland & Ellis)

Led project team in a multi-client case assessing domestic crude oil market value at the lease in the mid-continent region. Analysis focused on lease-level cash transactions. Principal areas of research included the effects of transactions costs in the determination of value, the economic functions of different contract structures found within the oil industry, and the economic role of and the determination of value provided by various market participants operating between the lease and downstream markets. Analysis was prepared on behalf of several major domestic oil companies *In the Matter of Carl Engwall, et al. v. Amerada Hess, et al., CV-95-322*, Fifth Judicial Circuit, County of Chaves, New Mexico. (fall 1996 - spring 1997)

McDonnell Douglas Corporation (Steptoe and Johnson)

Assisted in evaluation of how the public release of sensitive cost and price information affects competition. Analysis focused on the role of information in negotiated outcomes between and across market participants and the ways outcomes are impacted when key information is revealed. (November 1996)

Native American Fish and Wildlife Society

Facilitated a conference session between representatives of tribal, federal, state, and other agencies involved with the protection, preservation, and management of tribal natural resources. The objective of the conference was to promote the formation of partnerships and begin to define future intergovernmental relations between tribal and state/federal agencies responsible for the management of natural resources. Issues discussed included federal trust responsibility and the sovereignty of Indian nations. (November 1996)

Exxon Corporation and Exxon USA (Miller and Chevalier)

Drafted testimony on behalf of Exxon Corporation in support of its claim of production and income tax deficiencies related to the refining of Alaskan North Slope crude oil during the period of July 1979 through April 1980. Analysis included estimate of income realization on ANS during period under review, and the economic impact of various federal crude oil and product price controls. Analysis and draft testimony was prepared in support of deposition on behalf of Exxon Corp. and Exxon Company USA before the *Department of Revenue, State of Alaska, in the Matter of Exxon Corporation & Affiliated Companies, Case Load No. 94925*. (1996)

U.S. Independent Power Producer

Co-authored a paper providing analytical framework for calculating stranded costs associated with deregulation of the electric power industry. Report highlights fundamental assumptions and potential consequences of such assumptions in determining calculations. (1996)

Massachusetts Technology Collaborative

Co-authored a study assessing the effects of reductions in federally-funded R&D on the Massachusetts economy. Examined linkages between hospital research and the private sector and assisted in development of models to quantify impacts of spending cuts. (1995-96)

U.S. Generating Company

Assisted in the development of the client's presentation before the State of Massachusetts Energy Facilities Siting Board in order to request permission to construct new electric generating facilities. Principal area of research concerned the economics of electricity generation and the need for new power production within the New England region. (1996)

Northeast Utilities

Assisted in development of presentation to senior management on strategic considerations associated with performance based ratemaking. Work included developing risk assessment of various PBR designs. (1995)

Northeast Utilities

Assisted in the preparation of written testimony for the *Massachusetts Department of Public Utilities Commission (Docket No. 95-30)* and *Connecticut Department of Public Utility Control (Docket No. 94-12-13)*, analyzing the effects of proposed deregulation of the electrical industry. (1995)

Exxon Corporation and Exxon USA (Baker and Hostetler)

Performed economic analysis on the pricing of crude oil within the California crude oil market to determine whether prices reflected "fair market value." Work involved a comparison of West Coast and Gulf Coast oil markets, including analyzing relative demands for different petroleum products, location and volume of oil production, movements of crude oil within, to, and from the West Coast, available transportation (capacity and associated costs), and refinery locations, capacities, capabilities, and downstream constraints to determine marginal cost and value of various crudes. (1993-95)

Exxon Corporation and Exxon USA (Baker and Hostetler)

Analyzed pricing provisions of oil contracts involving domestically produced California crude oil and ANS during the period 1980 to 1989 in defense of claim of crude oil undervaluation on part of the company by the State of California. Analysis prepared in support of deposition testimony on behalf of Exxon Corporation and Exxon Company USA, Superior Court of the State of California for the County of Los Angeles *In the Matter of The People of the State of California and the City of Long Beach v. Chevron Corporation; et al.*, No. C 587 912. (December 7, 1994)

El Paso Natural Gas (Steptoc and Johnson)

Investigated effects of Order 636 and deregulation of natural gas pricing on "take or pay" contracts held by gas pipeline companies. (1994)

Ministry of Forests, Government of British Columbia (Miller and Chevalier)

Drafted testimony which analyzed the core economic issues surrounding an international timber trade dispute. Analyzed markets for British Columbian lumber and logs, and formulated a case study to assess potential economic impacts of a log-trade ban on a domestic timber industry. Critiqued methodologies for estimating countervailing duties. (1993-94)

PUBLICATIONS AND RESEARCH

"Foundation for Economic Development for the Hualapai Nation: Building an Enterprise Board" (with Daria Caliguire), Harvard Project on American Indian Economic Development, Project Series, April 1993.

OTHER REPORTS AND TESTIMONY

“Planning for Change, Preparing for Growth: Implications for Massachusetts of Reductions in Federal Research Spending” (with Adam B. Jaffe, Amy Bertin Candell, Michael Laznik, and Kelly T. Northrop), The Economics Resource Group, Inc., funded by the Massachusetts Technology Collaborative, February 1996.

“Do Environmental Regulations Impair Competitiveness? A Critical Review of Economic Studies” (with Barry Galef and Steven Peterson), prepared by ICF Consulting Group and The Economics Resource Group, Inc., for the Office of Policy Analysis and Review, Office of Air and Radiation, U.S. Environmental Protection Agency, September 1995.

“Critique of ‘Sparks and Wires’” (with Barbara Kates-Garnick), prepared on behalf of Northeast Utilities Systems Companies before the Connecticut Department of Public Utility Control (*Docket No. 94-12-13*), May 1995.

HONORS AND AWARDS

Honorable Mention, Master’s Thesis, Review Committee, John F. Kennedy School of Government, Harvard University, Spring 1993.