

RESERVOIR CLASS FIELD DEMONSTRATION

U.S. Department of Energy
National Petroleum Technology Office



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Publication & Presentation
Bibliography

December 1997

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**Publication & Presentation
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December 1997

Overview

The Reservoir Class Field Demonstration Program was initiated in FY92 in response to rapidly declining domestic production and the realization that huge volumes of oil are being abandoned in reservoirs because of uneconomic production techniques. This program is just one of the critical elements of the National Oil Program necessary to move Improved Oil Recovery (IOR) technology from the conceptual stage through research, pilot scale field experiments, and full-scale field demonstrations to industry acceptance and commercialization. Both the successful results and failures of the field demonstrations will provide focus to concurrent research programs. Elements of the field demonstrations that are suitable for broad industry application are being communicated to the industry through the oil program's technology transfer effort.

As part of the technology transfer effort, this listing of publications and presentations by the project operators has been compiled by the U.S. Department of Energy's (DOE) National Petroleum Technology Office (NPTO). DOE reports can be ordered through NPTO. To receive copies of publications and presentations contact the project operator. Project operators, and the contact person are listed in the section titled "Contacts".

Also available through NPTO is a book titled "Class Project Summary Sheets". Included in this book are maps showing project locations, tables of technologies addressed, and an overview of each project along with project results. This book is updated approximately every six months.

This information can also be found on the NPTO Website at: npto.doe.gov

Reservoirs were classified by depositional environment. The classifications are as follows:

- Class I Fluvial Dominated Deltaic Reservoirs
- Class II Shallow Shelf Carbonate Reservoirs
- Class III Slope & Basin Clastic Reservoirs

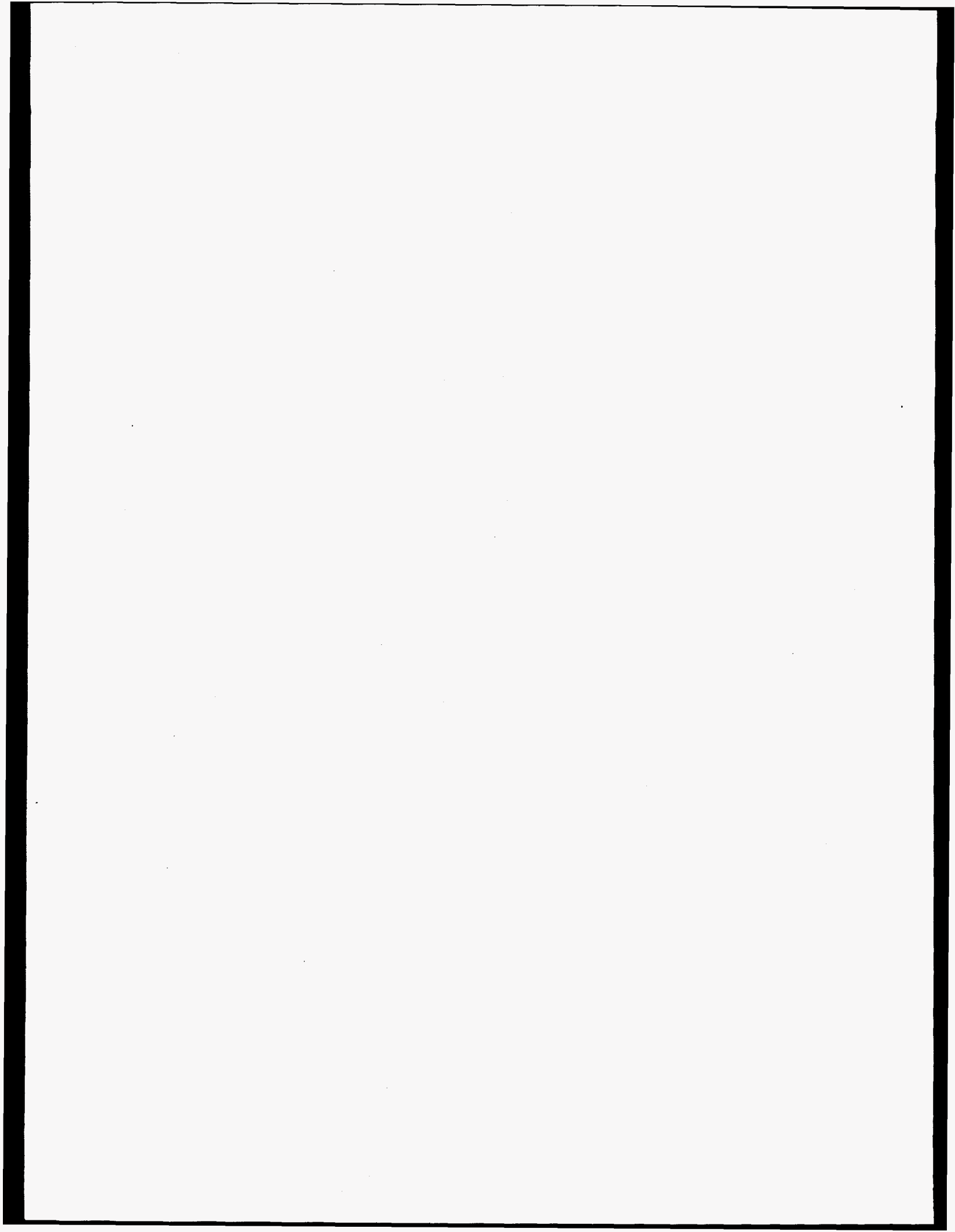


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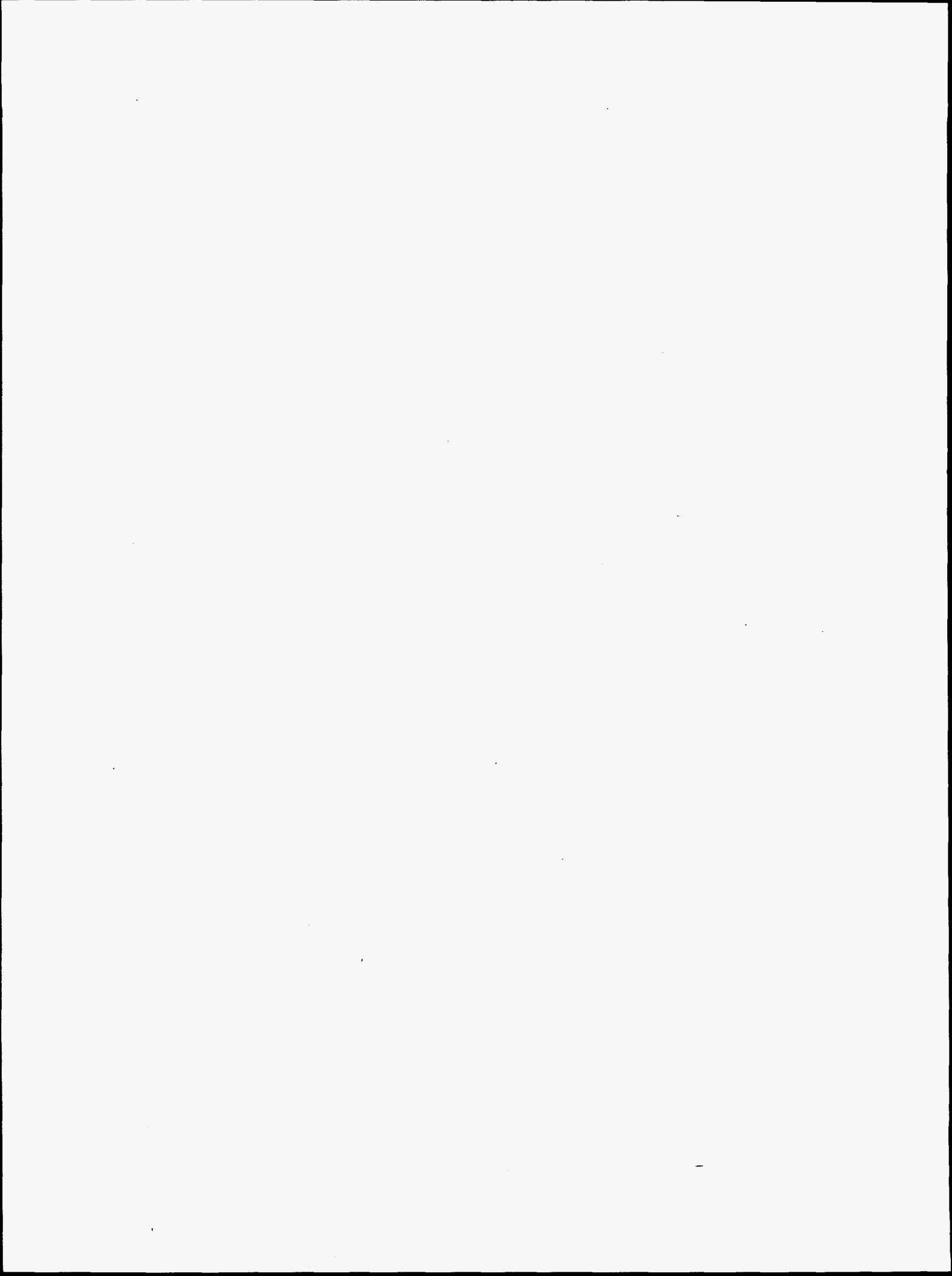
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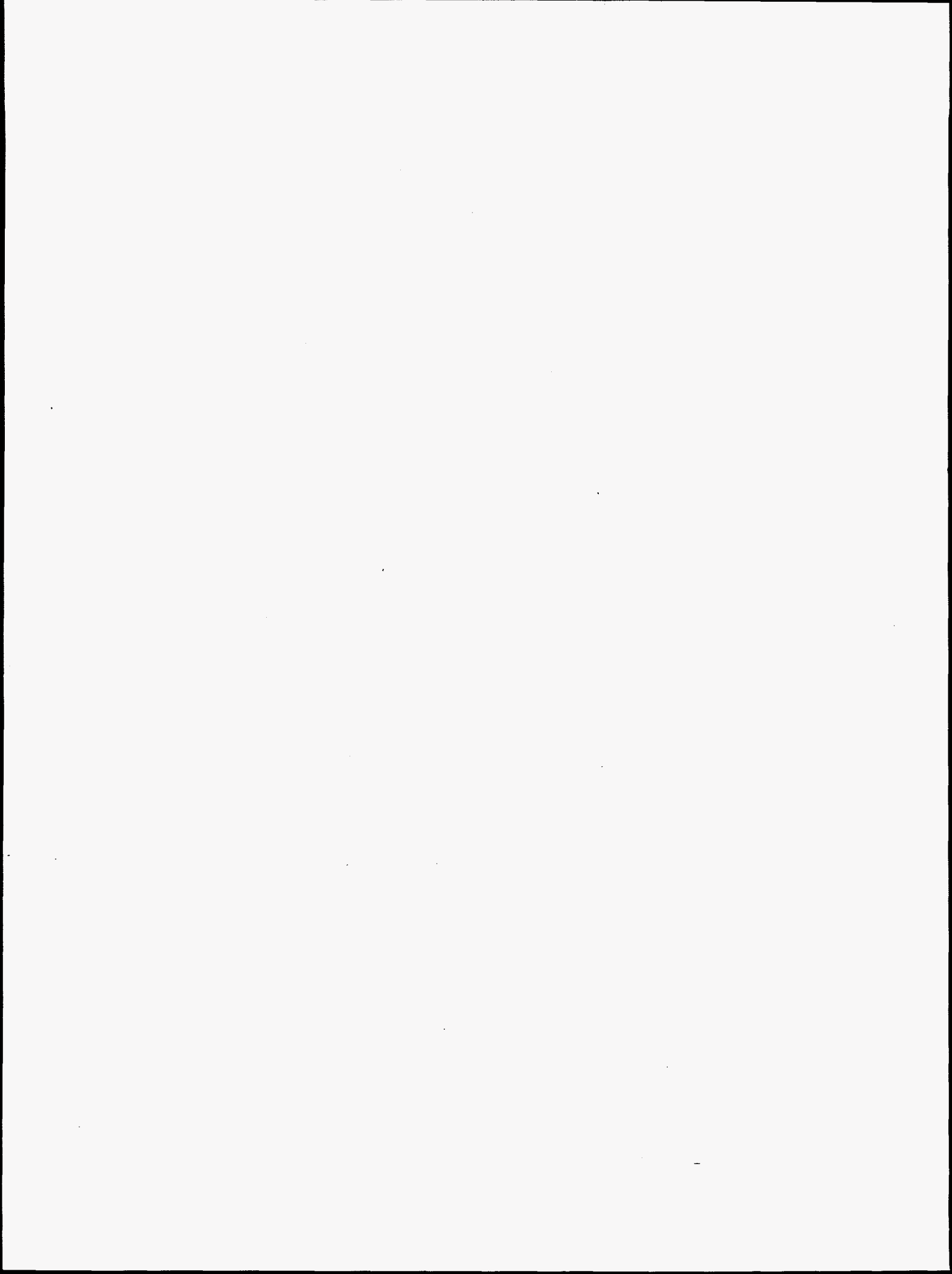
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Acronyms

<i>AAPG</i>	American Association of Petroleum Geologists
<i>BEG</i>	Bureau of Economic Geology, University of Texas, Austin
<i>CIPA</i>	California Independent Producers Association
<i>DOE</i>	Department of Energy
<i>DPA</i>	Digital Petroleum Atlas
<i>EAGE</i>	European Association of Geoscientists and Engineers
<i>EOR</i>	Enhanced Oil Recovery
<i>FDD</i>	Fluvial Dominated Deltaic
<i>GBRN</i>	Global Basin Research Network
<i>IOR</i>	Improved Oil Recovery
<i>LSU</i>	Louisiana State University
<i>MOFRC</i>	Michigan Oil Field Research Consortium
<i>NIPER</i>	National Institute for Petroleum and Energy Research
<i>NPTO</i>	National Petroleum Technology Office
<i>NRC</i>	National Research Council
<i>OTC</i>	Offshore Technology Conference
<i>PTTC</i>	Petroleum Technology Transfer Council
<i>RMAG</i>	Rocky Mountain Association of Geologists
<i>SEG</i>	Society of Exploration Geophysicists
<i>SEPM</i>	Society for Sedimentary Geology
<i>SIPES</i>	Society of Independent Professional Earth Scientists
<i>SPE</i>	Society of Petroleum Engineers
<i>TCB</i>	Tijerina-Canales-Blucher
<i>TIPRO</i>	Texas Independent Producers and Royalty Owners
<i>WAG</i>	Water Alternating Gas

Class I Projects



Amoco Production

West Hackberry Tertiary Project

Contract Number: DE-FC22-93BC14963

Publications

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Bureau of Economic Geology, University of Texas

Revitalizing Mature Oil Play Strategies for Finding and Producing Unrecovered Oil in Frio Fluvial-Deltaic Reservoirs of South Texas

Contract Number: DE-FC22-93BC14959

Publications

McRae, L. E. and M. H. Holtz. 1994. *Revitalizing a Mature Oil Play: Strategies for Finding and Producing Unrecovered Oil in Frio Fluvial-Deltaic Reservoirs of South Texas: Annual Report*. DOE Report No. DOE/BC/14959-5, May.

McRae, L. E. and M. H. Holtz. 1994. Integrated Reservoir Characterization of Mature Oil Reservoirs: An Example from Oligocene Frio Fluvial-Deltaic Sandstones, Rincon Field, South Texas. *Gulf Coast Association of Geological Societies Transactions*, Vol. 44, October.

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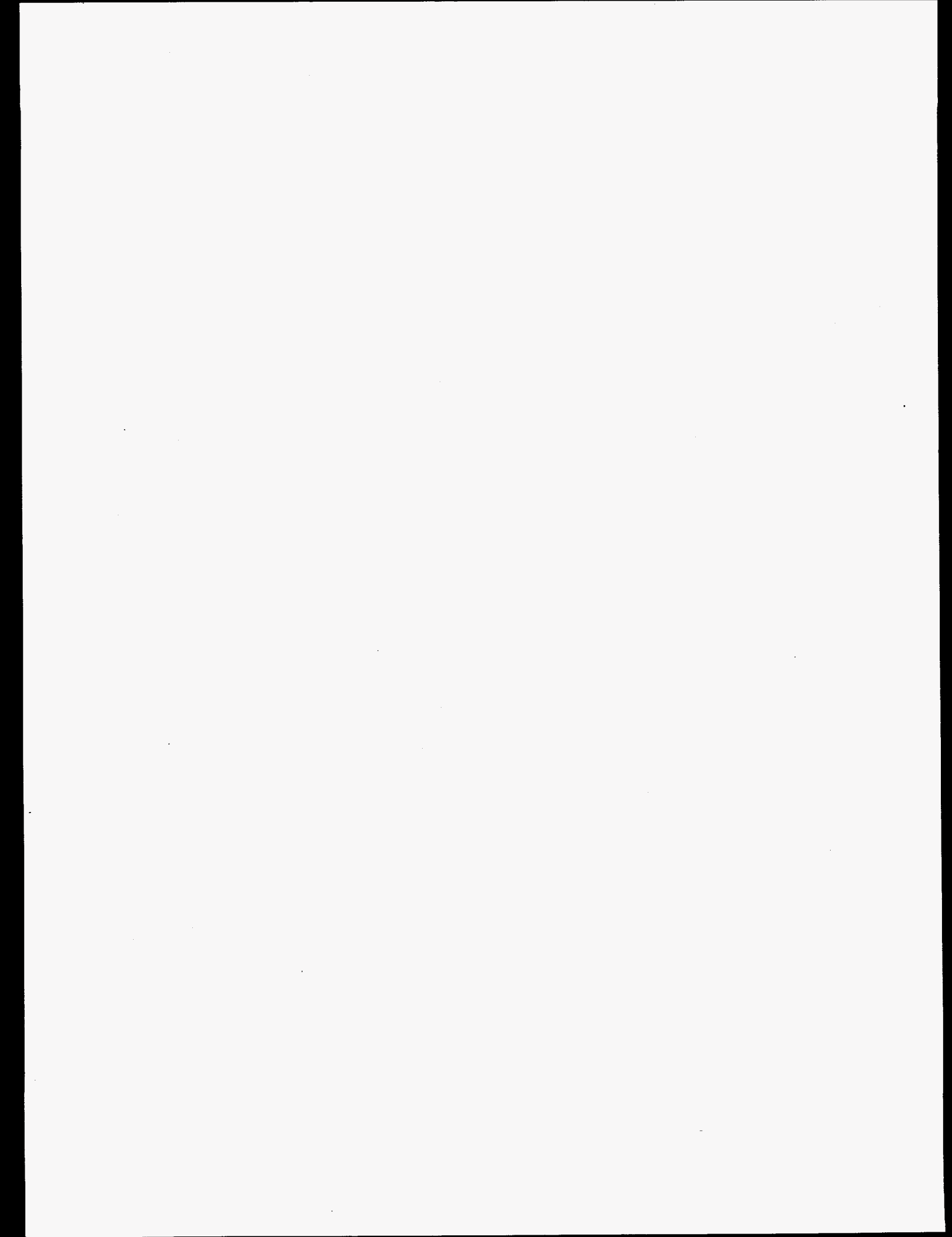
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Levey, Ray. 1996. Identifying Opportunities for Reserve Growth in Mature Fields of the Frio Fluvial-Deltaic Play, Vicksburg Fault Zone, South Texas. South Texas Geological Society Short Course, San Antonio, Texas, April 8.

Knox, P. R. 1996. Accommodation-Based Controls on Fluvial-Deltaic Reservoir Compartmentalization: Examples from the Oligocene Frio Formation, South Texas. AAPG Annual Convention, San Diego, California, May 19-22.

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Dynamic Enhanced Recovery Technologies

Contract Number: DE-FC22-93BC14961

Publications

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Diversified Operating Corporation

Improved Secondary Recovery Demonstration for the Sooner Unit

Contract Number: DE-FC22-93BC14954

Publications

Sippel, M., J. Sunkin, R. Pritchett, and B. Hardage. 1993. *Advanced Secondary Recovery Demonstration for the Sooner Unit: End of Phase 1 Report*. DOE Report No. DOE/BC/14954-5, July.

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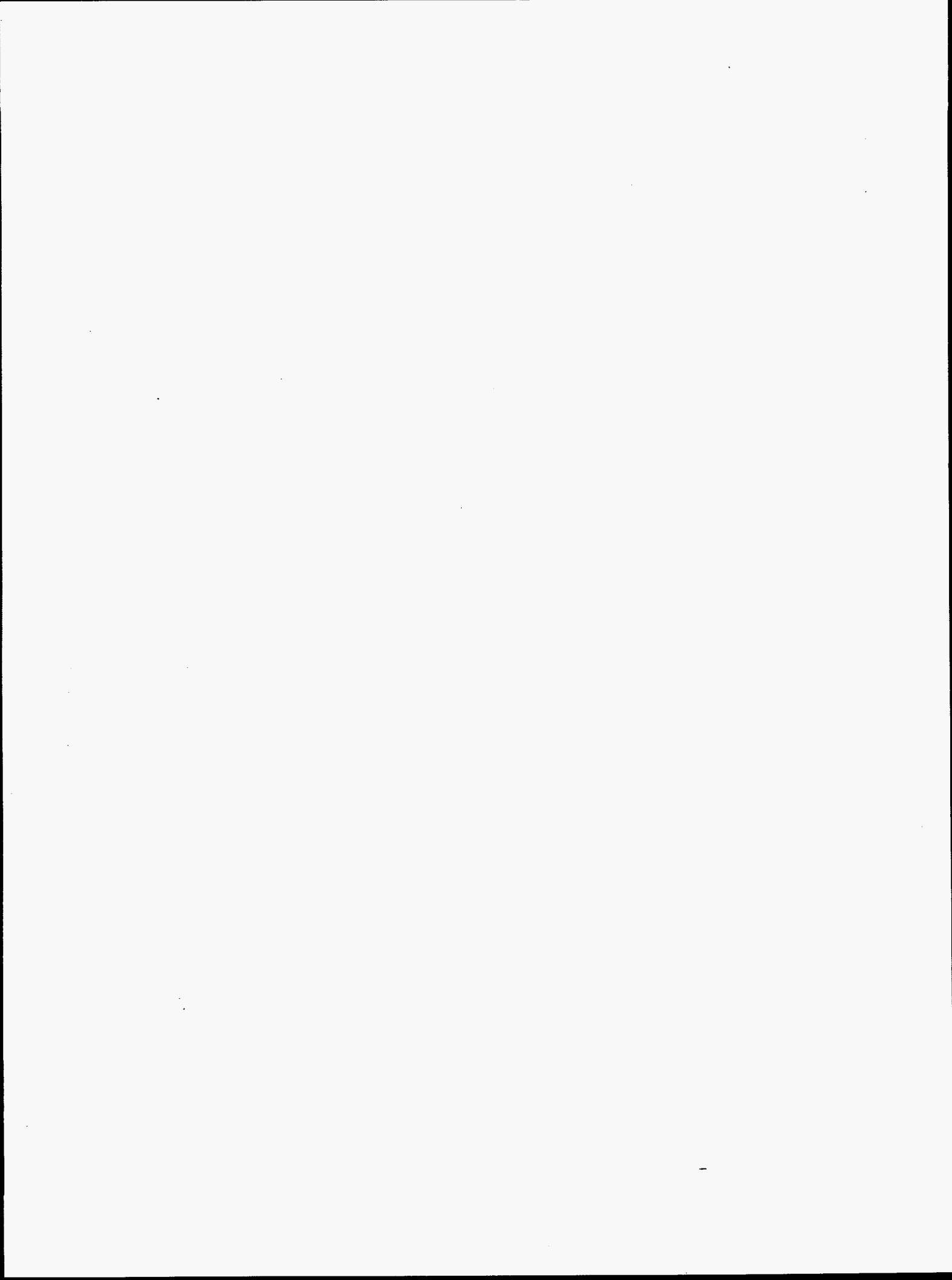
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Hughes Eastern

Utilization of the Microflora Indigenous to and Present in Oil-Bearing Formations to Selectively Plug the More Porous Zones Thereby Increasing Oil Recovery During Waterflooding

Contract Number: DE-FC22-93BC14962

Publications

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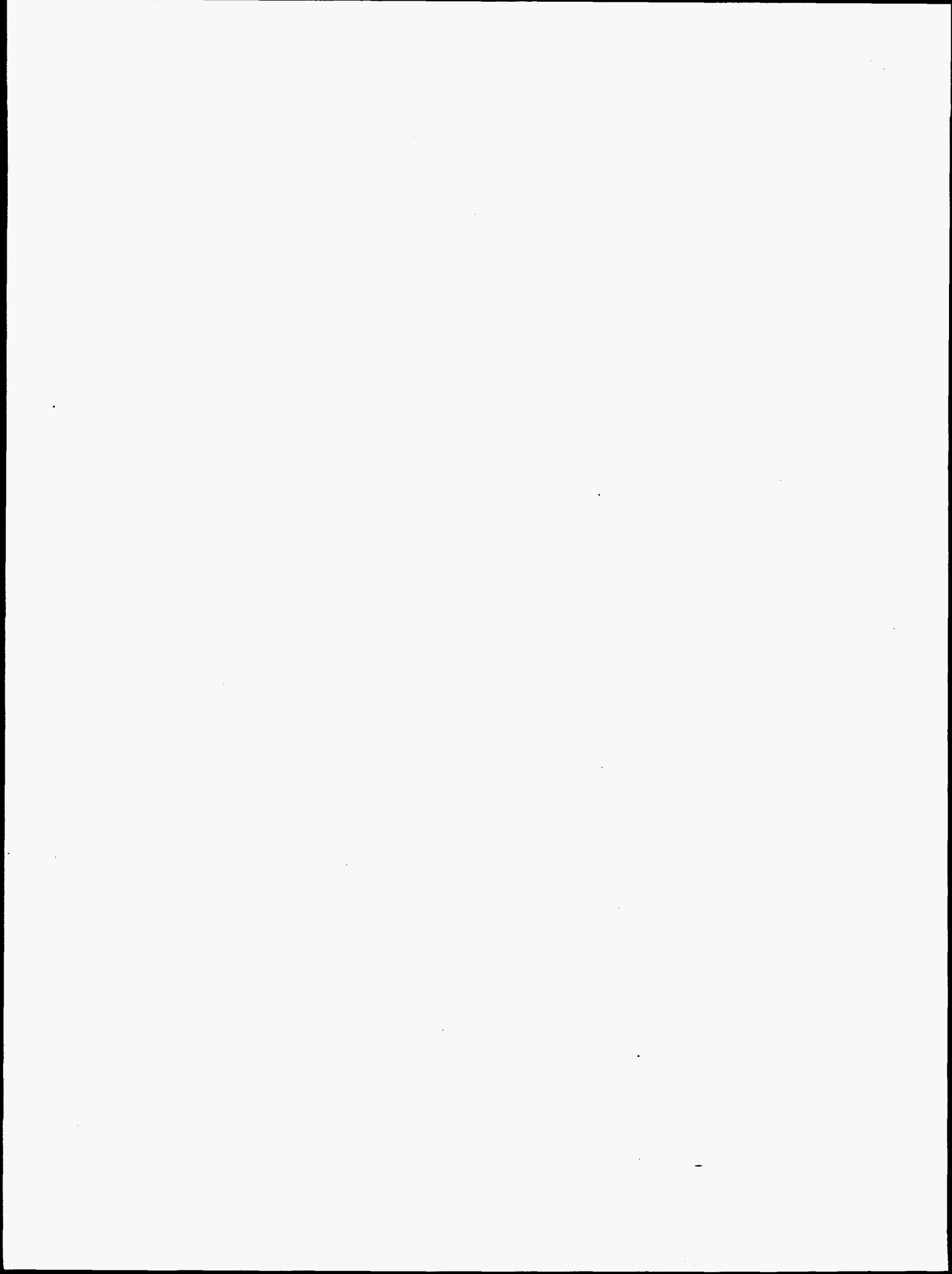
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Inland Resources/Lomax Exploration

Green River Formation Water Flood Demonstration Project

Contract Number: DE-FC22-93BC14958

Publications

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Oklahoma Geological Survey

Identification and Evaluation of Fluvial-Dominated Deltaic Reservoirs

Contract Number: DE-FC22-93BC14956

Publications

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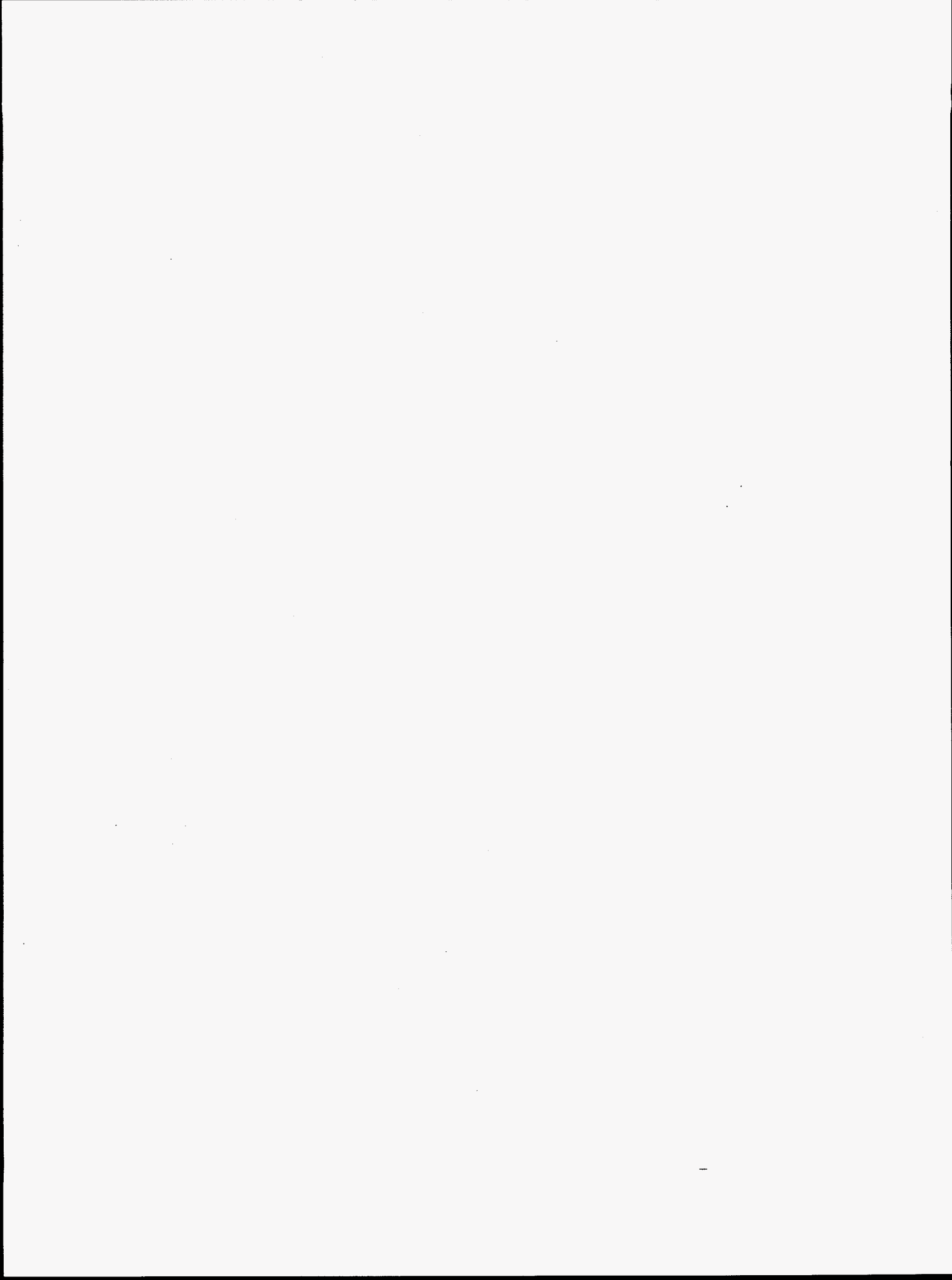
Sierra Energy Company

Enhanced Oil Recovery Utilizing High-Angle Wells in the Frontier Formation, Badger Basin Field, Park County, Wyoming

Contract Number: DE-FC22-93BC14950

Publications

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Texaco E & P

Post Waterflood CO₂ Miscible Flood in Light Oil Fluvial-Dominated Deltaic Reservoirs

Contract Number: DE-FC22-93BC14960

Publications

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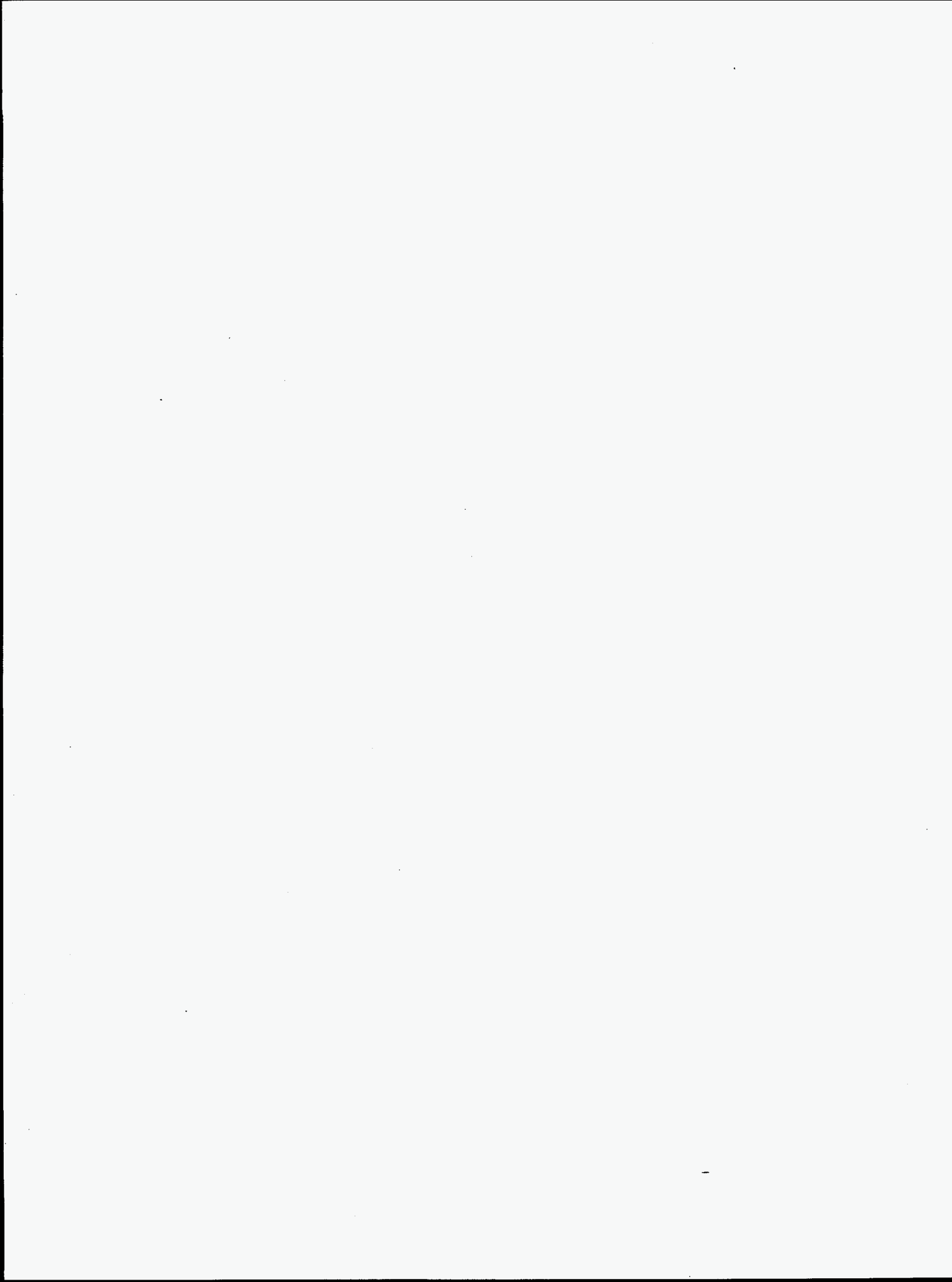
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University of Kansas

Improvement of Oil Recovery in Fluvial-Dominated Deltaic Reservoirs in Kansas

Contract Number: DE-FC22-93BC14957

Publications

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University of Tulsa

Integrated Approach Towards the Application of Horizontal Wells to Improve Waterflooding Performance (Glenn Pool Field, OK)

Contract Number: DE-FC22-93BC14951

Publications

Kelkar, M., C. Liner, and D. Kerr. 1994. *Integrated Approach Towards the Application of Horizontal Wells to Improve Waterflooding Performance; Annual Report*. DOE Report No. DOE/BC/14951-5, June.

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Presentations

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Utah Geological Survey

Increased Oil Production and Reserves from Improved Completion Techniques in the Bluebell Field

Contract Number: DE-FC22-93BC14953

Publications

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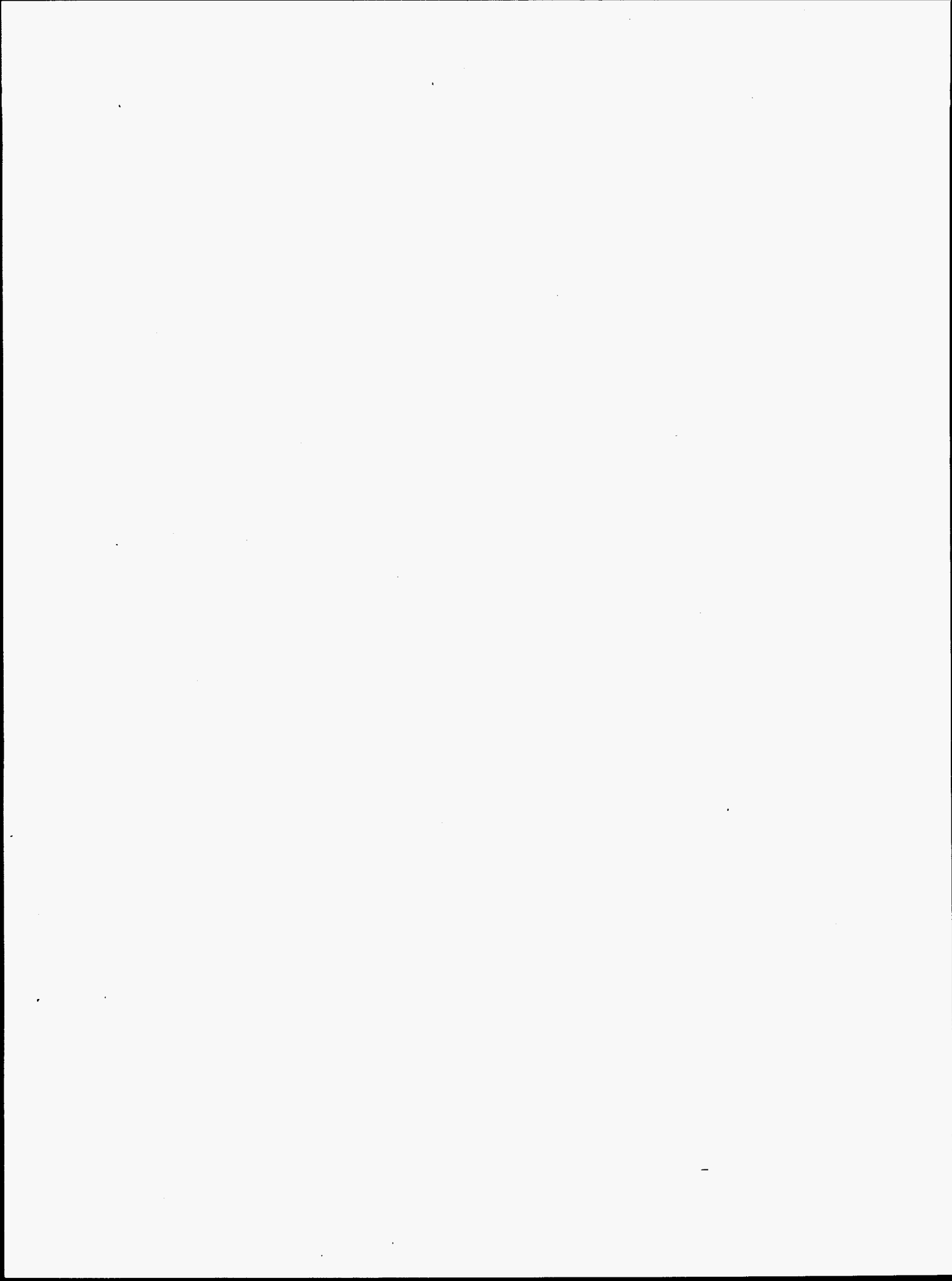
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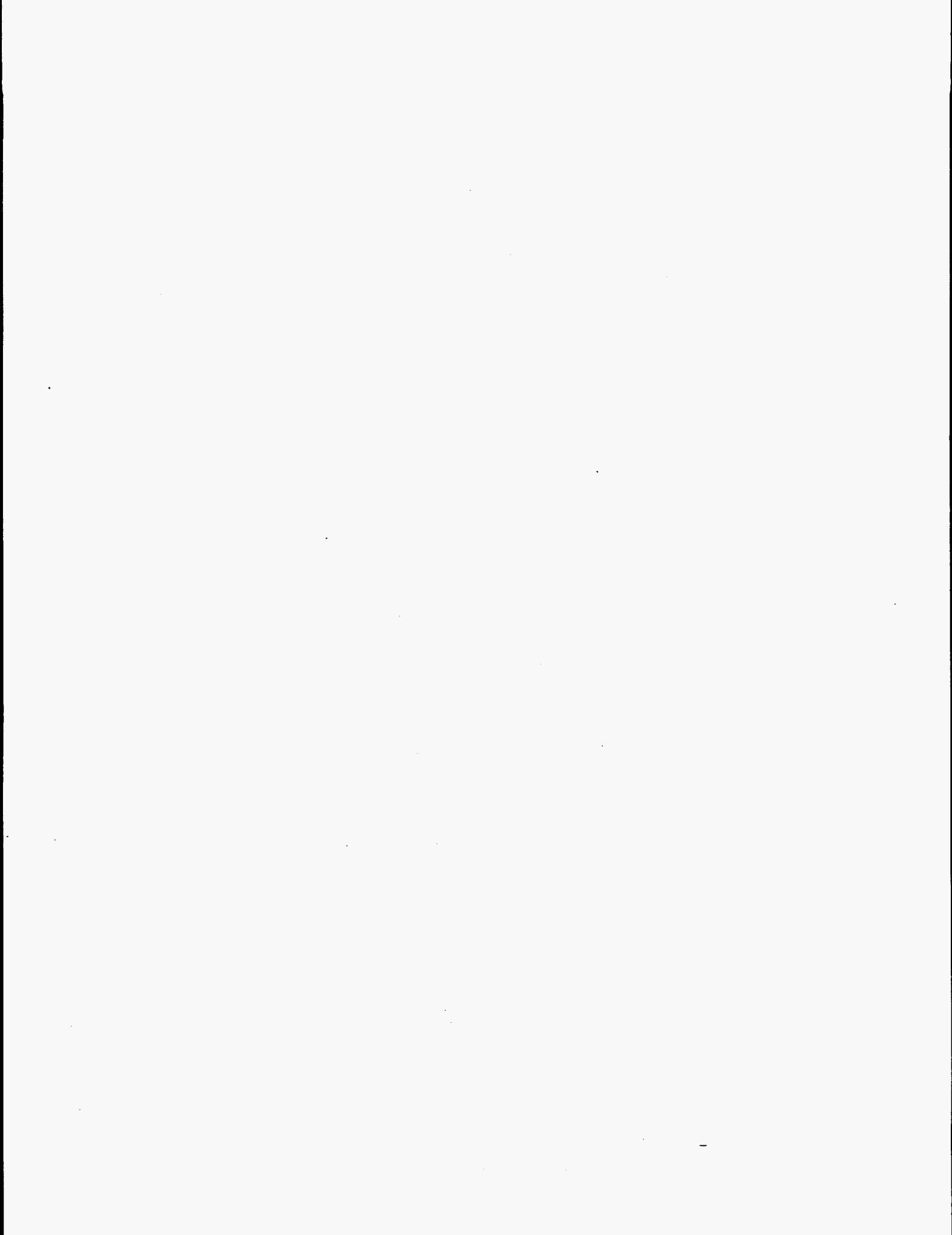
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Class II Projects



FINA

Application of Integrated Reservoir Management and Reservoir Characterization to Optimize Infill Drilling

Contract Number: DE-FC22-93BC14989

Publications

Pande, P. K., M. B. Clark, M. Kelkar, R. K. Vessell, and P. E. Hunt. 1994. Application of Integrated Reservoir Management and Reservoir Characterization to Optimize Infill Drilling. SPE Paper 27657, Poster session, SPE Permian Basin Oil and Gas Recovery Conference, Midland, Texas, March 16–18.

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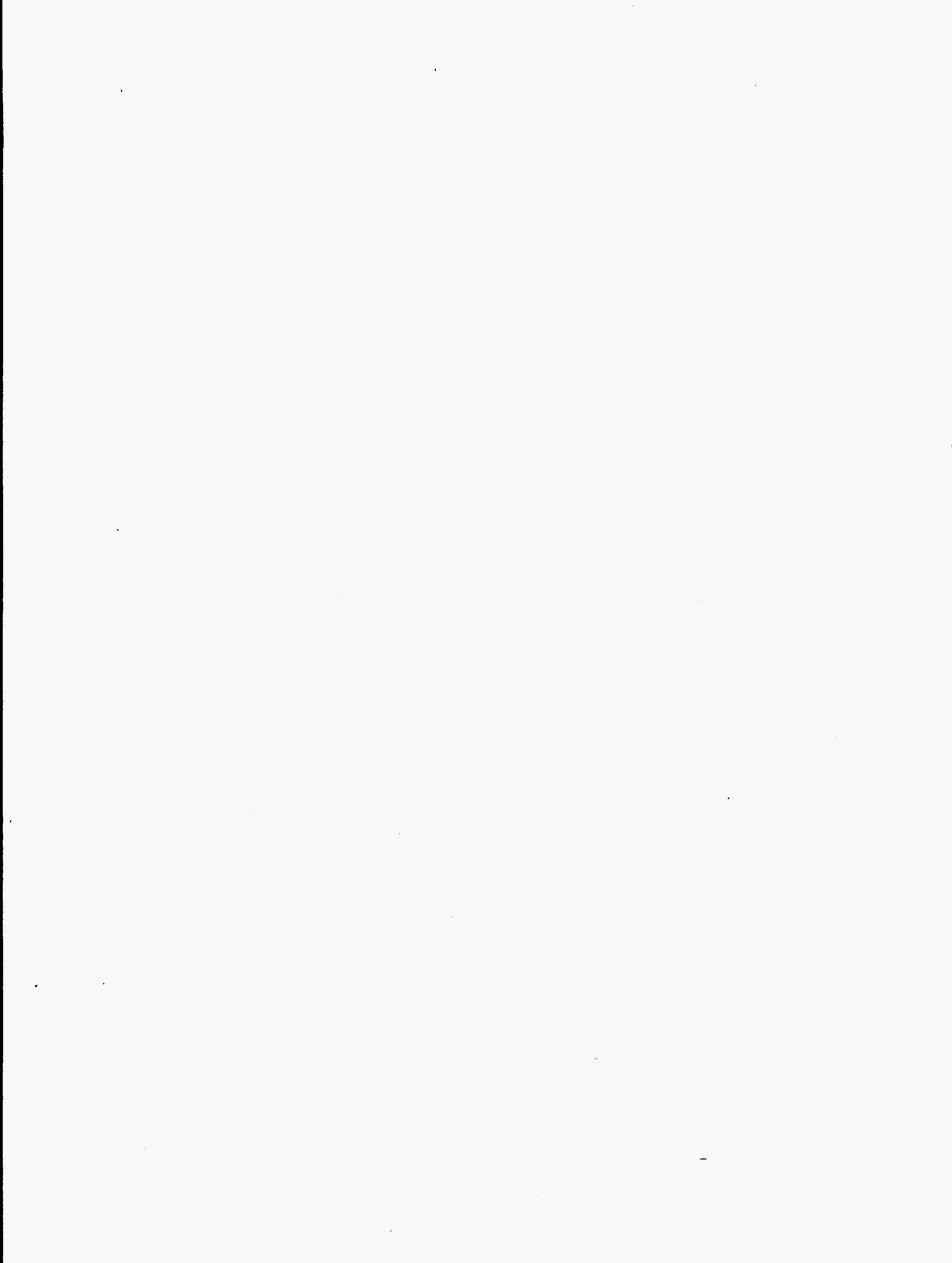
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Laguna Petroleum

An Integrated Study of the Grayburg/San Andres Reservoir, Foster and South Cowden Fields, Ector County, Texas

Contract Number: DE-FC22-93BC14982

Publications

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Improved Recovery Demonstration for Williston Basin Carbonates

Contract Number: DE-FC22-93BC14984

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Michigan Tech. University

Recovery of Bypassed Oil in the Dundee Formation Using Horizontal Drains

Contract Number: DE-FC22-93BC14983

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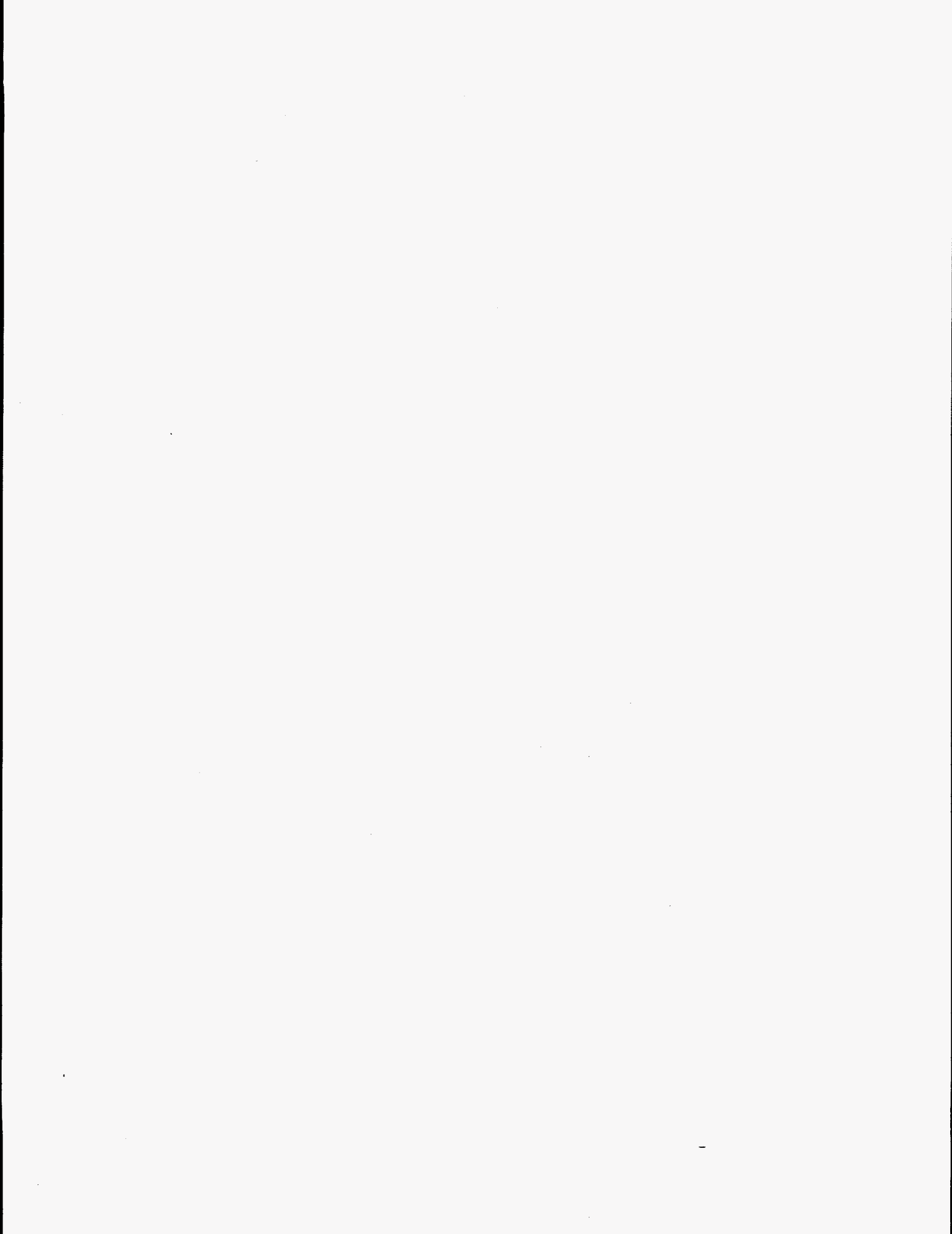
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OXY, USA

Application of Reservoir Characterization and Advanced Technology Improves Recovery and Economics in Lower Quality Shallow Shelf San Andres Reservoirs

Contract Number: DE-FC22-93BC14990

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Phillips Petroleum

Design and Implementation of a CO₂ Flood Utilizing Advanced Reservoir Characterization and Horizontal Injection Wells in a Shallow Shelf Carbonated Approaching Waterflood Depletion

Contract Number: DE-FC22-93BC14991

Publications

Dollens, K., B. W. Wylie, J. C. Shoumaker, O. Johannessen, and P. Rice. 1997. The Evaluation of Two Different Methods of Obtaining Injection Profiles in CO₂ WAG Horizontal Injection Wells. SPE Production Operations Symposium, Oklahoma City, Oklahoma, March 9–10.

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Presentations

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Texaco E & P

CO₂ Huff-n-Puff Process in Light Oil Shallow Shelf Carbonate Reservoir (Central Vacuum Unit), Vacuum Field, Lea County, New Mexico

Contract Number: DE-FC22-93BC14986

Publications

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University of Kansas

Improved Oil Recovery in Lower Meramecian (Mississippian) Carbonate Reservoirs of Kansas

Contract Number: DE-FC22-93BC14987

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Contract Number: DE-FC22-93BC14988

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions.

2. It then goes on to describe the various methods used to collect and analyze data.

3. The next section details the results of the study, including the identification of key trends and patterns.

4. Finally, the document concludes with a series of recommendations for future research and practice.

5. The authors also provide a list of references for further reading on this topic.

6. In addition, they include a glossary of key terms and a list of abbreviations.

7. The document is well-organized and easy to read, making it a valuable resource for anyone interested in this field.

8. It is particularly useful for those who are looking for practical advice on how to conduct research in this area.

9. Overall, this document provides a comprehensive overview of the current state of research in this field.

10. It is a must-read for anyone who is serious about understanding the complexities of this subject.

11. The authors have done a great job of presenting the information in a clear and concise manner.

12. Their analysis is thorough and insightful, providing a solid foundation for further exploration.

13. This document is a testament to the power of careful research and thoughtful analysis.

14. It is a model of what good research can look like, and it is a pleasure to read.

15. I highly recommend this document to anyone who is interested in this field.

16. It is a valuable addition to any library or collection of research materials.

17. The authors have provided a wealth of information that is both accessible and engaging.

18. Their work is a testament to the importance of staying up-to-date on the latest research in this field.

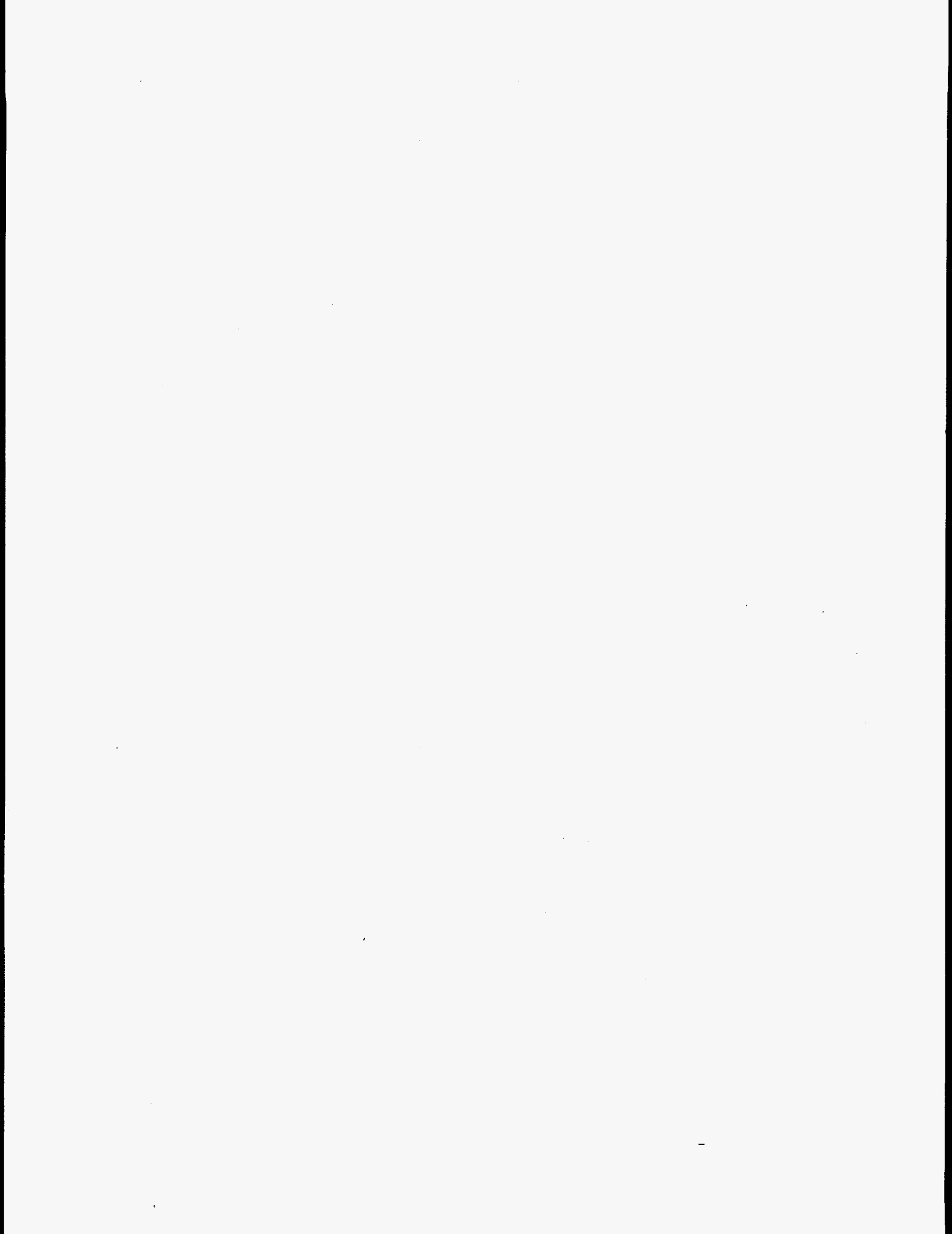
19. This document is a great example of how to present complex information in a way that is easy to understand.

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Class III Projects



ARCO Western Energy

Economic Recovery of Oil Trapped at Fan Margins Using High Angle Wells and Multiple Hydraulic Fractures

Contract Number: DE-FC22-95BC14940

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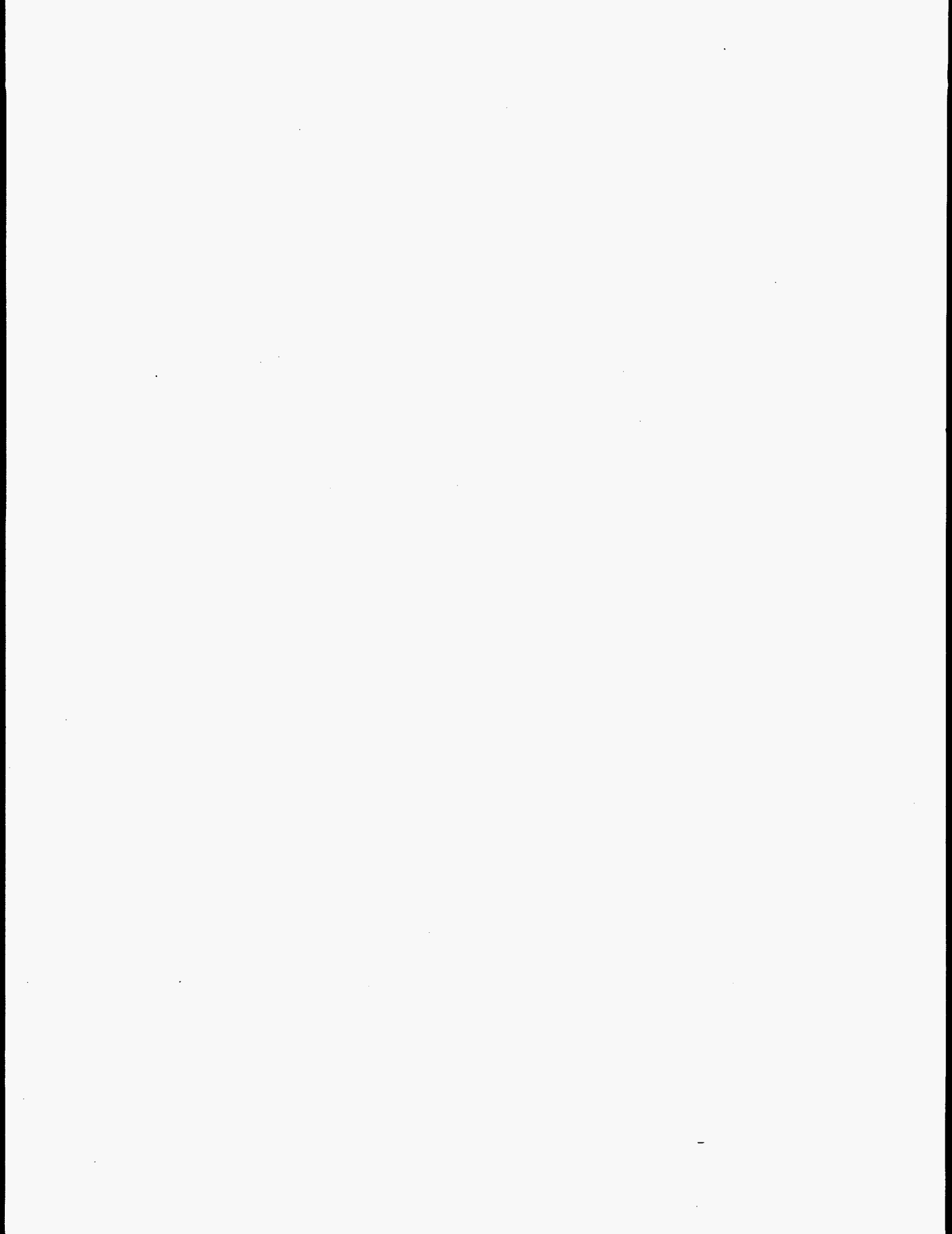
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Bureau of Economic Geology, University of Texas, Austin

Application of Advanced Reservoir Characterization, Simulation and Production Optimization Strategies to Maximize Recovery in Slope and Basin Clastic Reservoirs, West Texas (Delaware Basin)

Contract Number: DE-FC22-95BC14936

Publications

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Chevron USA, Inc.

Advanced Reservoir Characterization in the Antelope Shale to Establish the Viability of CO₂-Enhanced Oil Recovery in California's Monterey Formation Siliceous Shales

Contract Number: DE-FC22-95BC14938

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City of Long Beach—Steamflood

Increasing Heavy Oil Reserves in the Wilmington Oil Field through Advanced Reservoir Characterization and Thermal Production Technologies

Contract Number: DE-FC22-95BC14939

Publications

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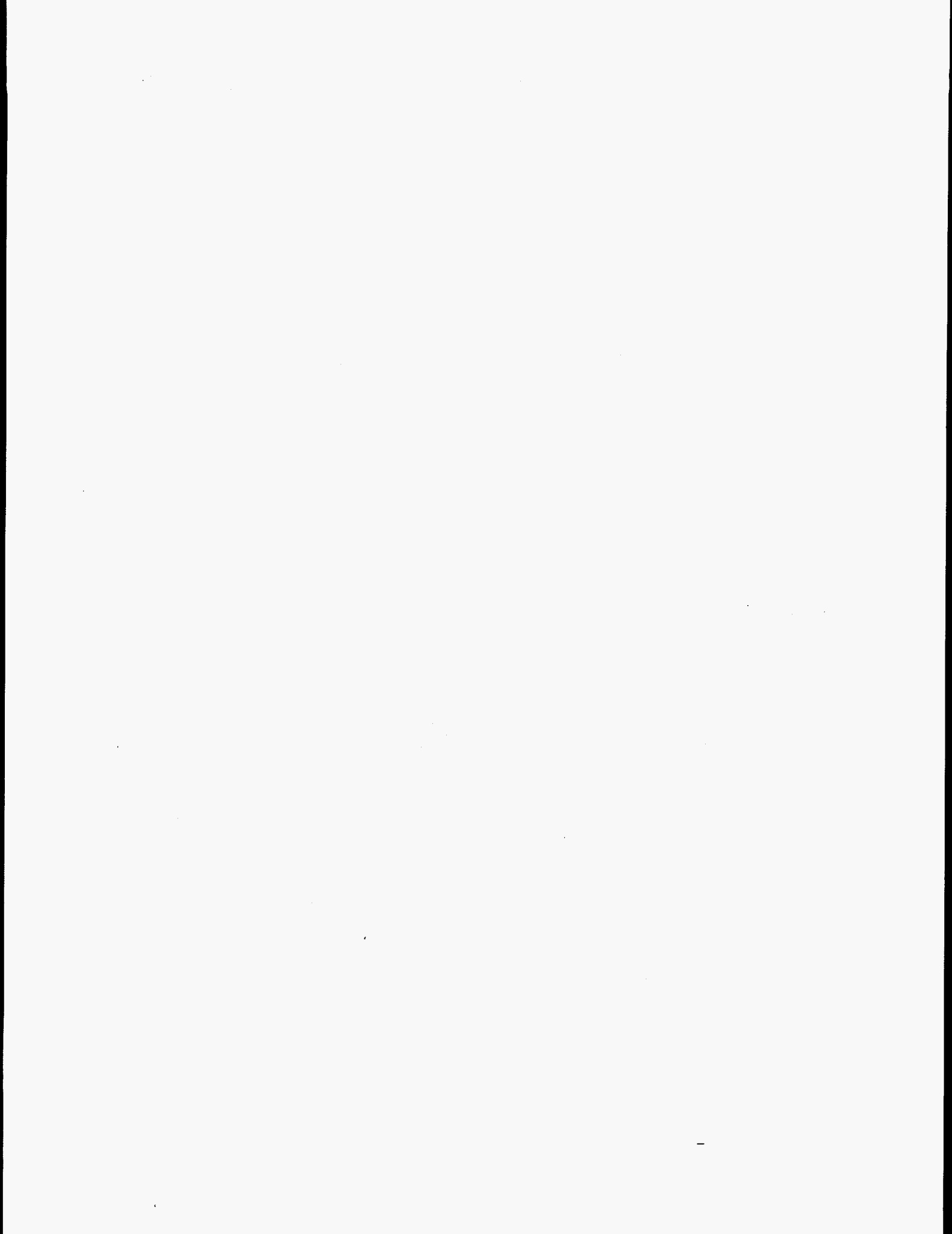
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City of Long Beach—Waterflood

Increasing Waterflood Reserves in the Wilmington Field through Improved Reservoir Characterization and Reservoir Management

Contract Number: DE-FC22-95BC14934

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Pacific Offshore Operators

The Feasibility of Optimizing Recovery and Reserves from a Mature and Geologically Complex Multiple Turbidite Offshore California Reservoir through the Drilling and Completion of a Tri-Lateral Horizontal Well

Contract Number: DE-FC22-95BC14935

Publications

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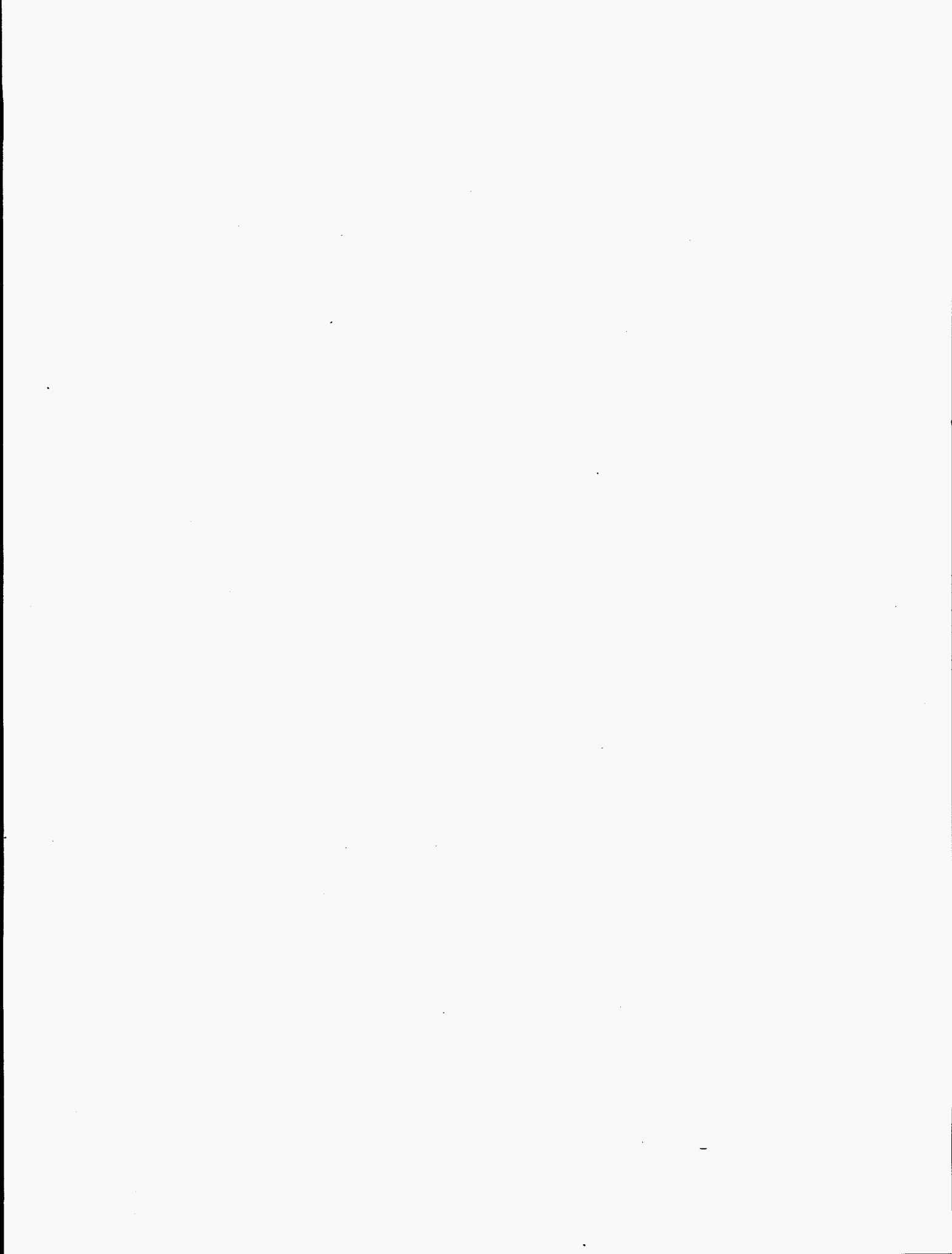
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Presentations

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Parker & Parsley Petroleum/Pioneer Natural Resources

Advanced Reservoir Characterization and Evaluation of CO₂-Gravity Drainage in the Naturally Fractured Spraberry Reservoir

Contract Number: DE-FC22-95BC14942

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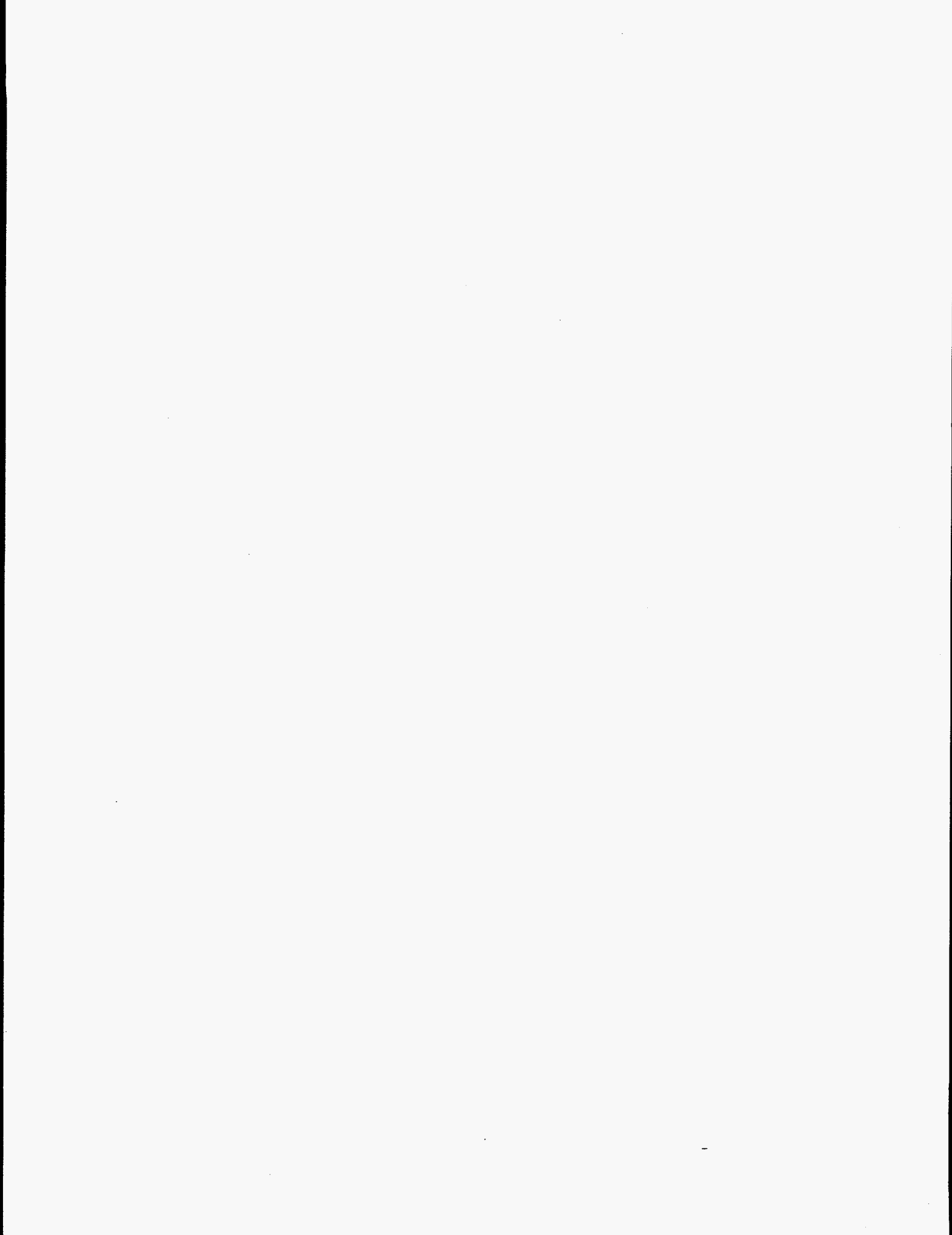
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Strata Production

Advanced Oil Recovery Technologies for Improved Recovery from Slope Basin Clastic Reservoirs, Nash Draw Brushy Canyon Pool, Eddy County, New Mexico

Contract Number: DE-FC22-95BC14941

Publications

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University of Utah

Reactivation of an Idle Lease to Increase Heavy Oil Recovery through Application of Conventional Steam Drive Technology

Contract Number: DE-FC22-95BC14937

Publications

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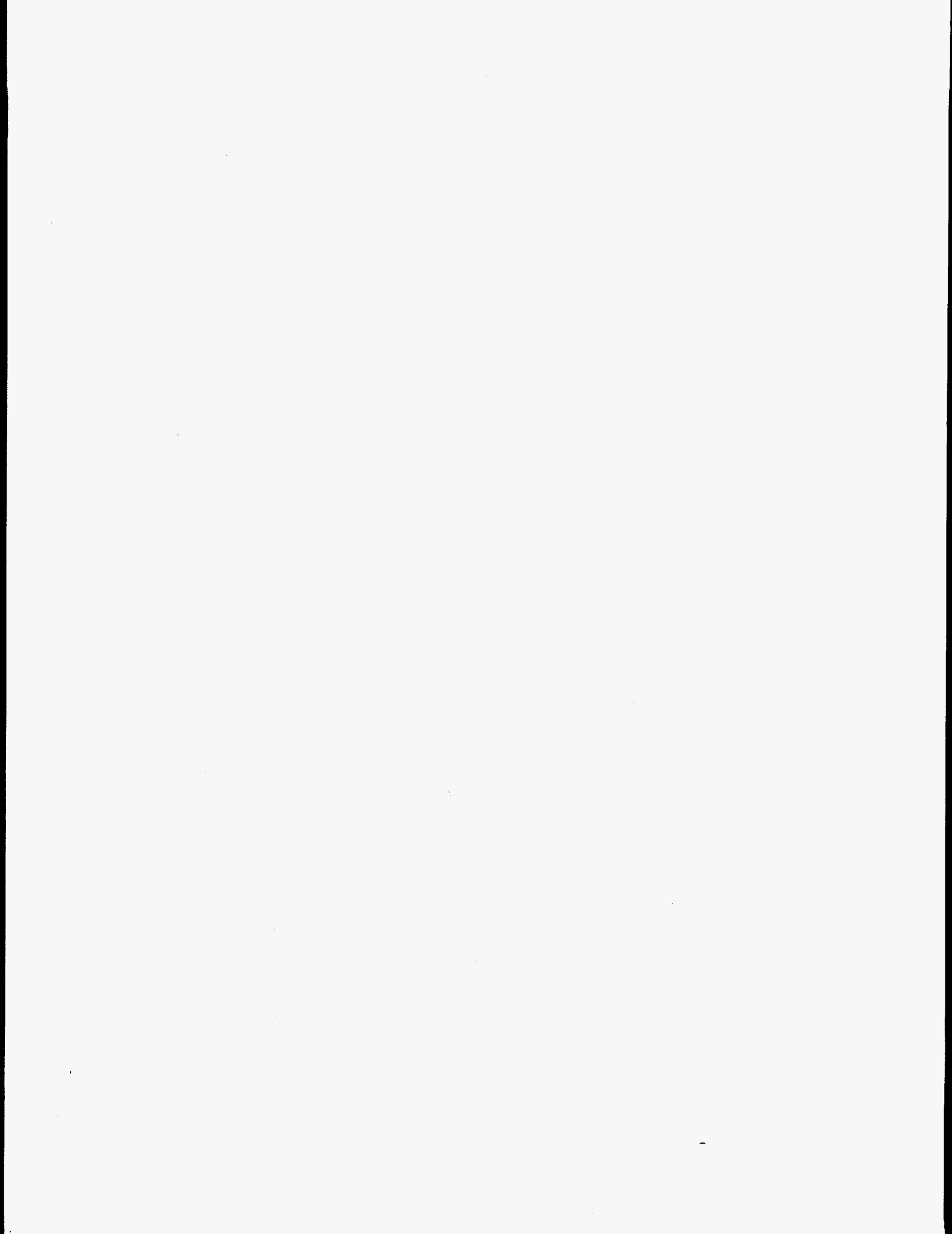
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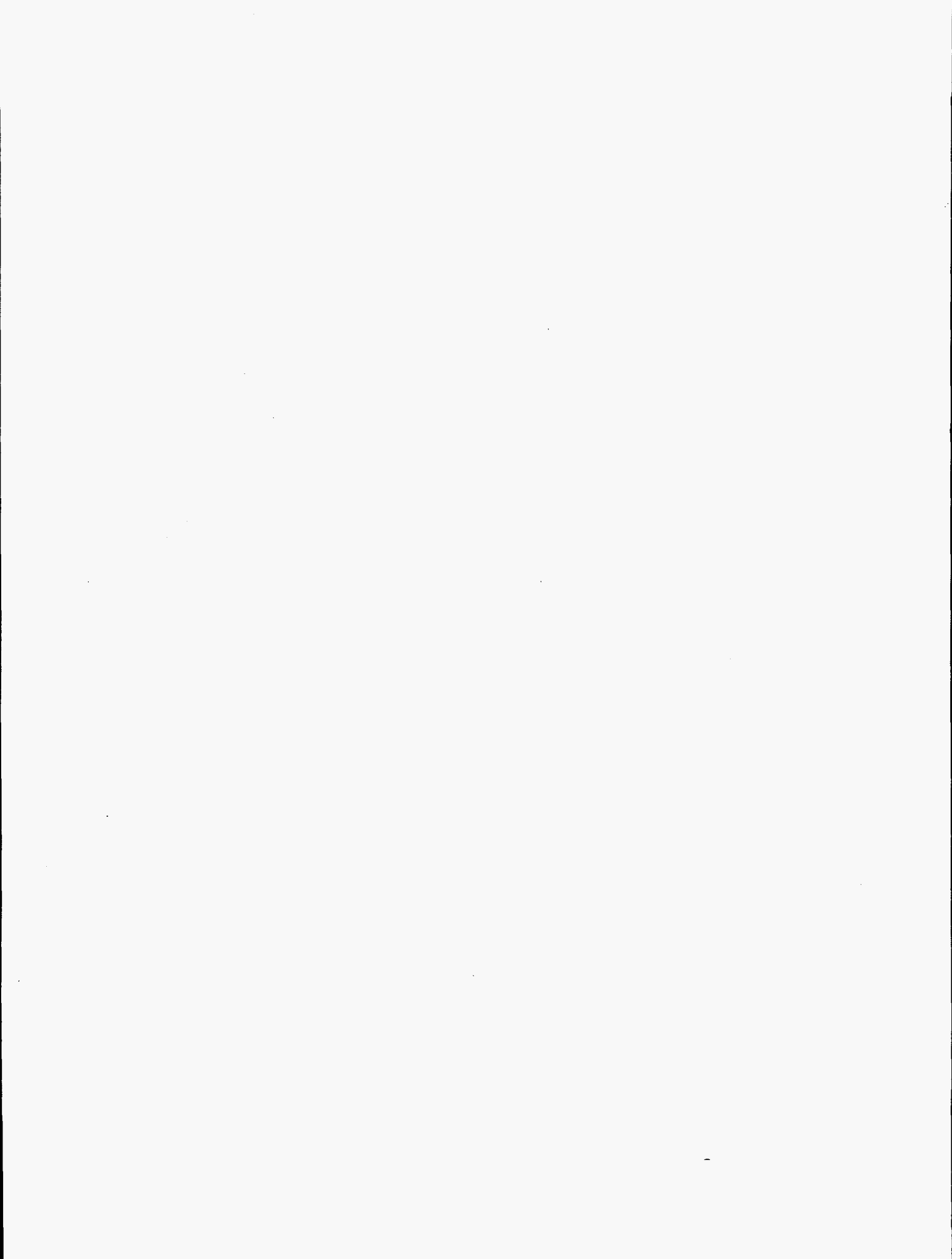
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Advanced Class Work



Diversified Operating Company

Polymer Treatments for "D" Sand Water Injection Wells

Contact Number: G4S60323

Publications

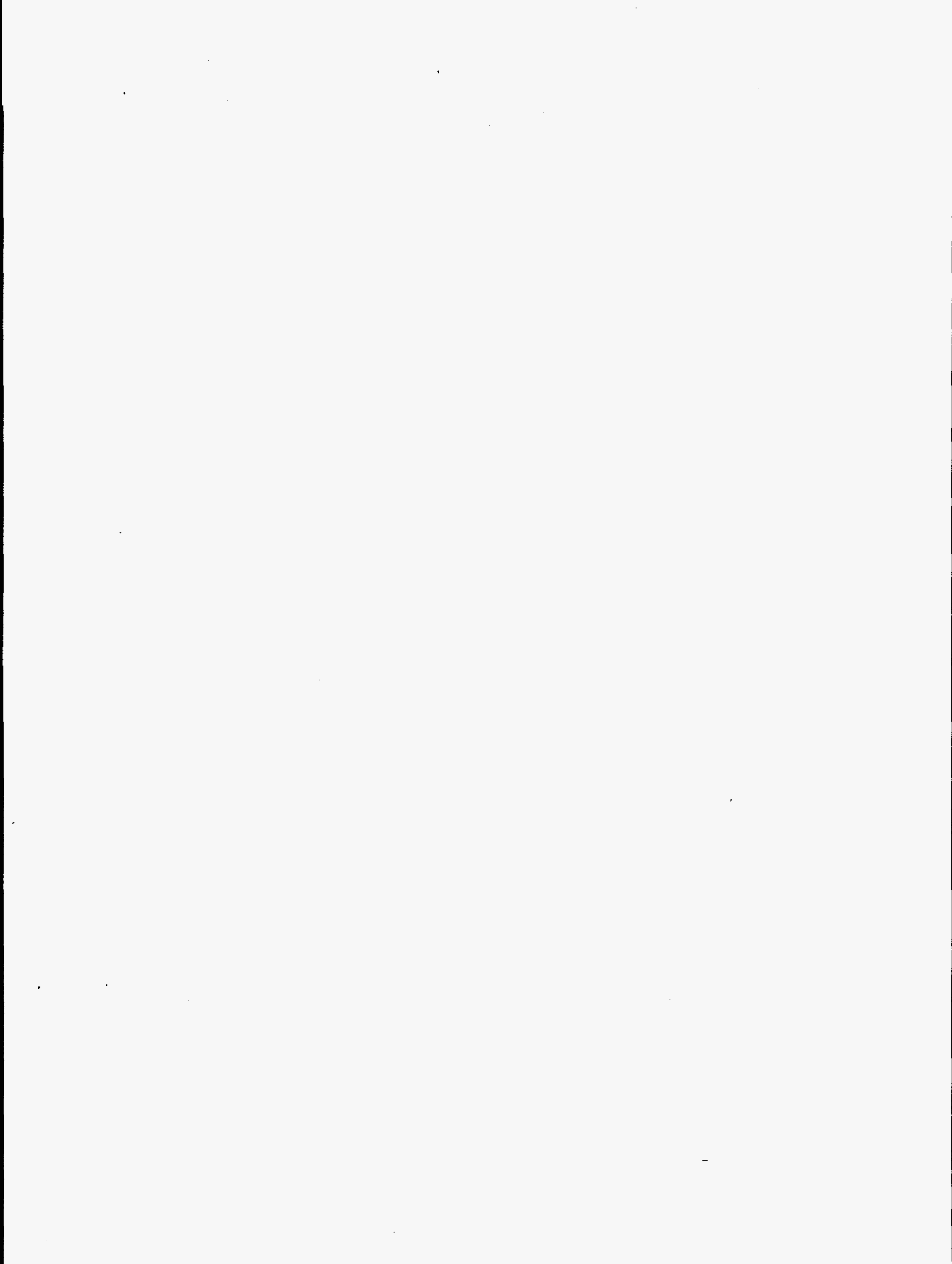
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Kansas Geological Survey

Development and Demonstration of an Enhanced, Integrated Spreadsheet-Based Well Log Analysis Software

Contract Number: G4S60821

Publications

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Bohling, G., J. Doveton, B. Guy, and L. Watney. 1997. PFEFFER 1.1 Manual.

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Doveton, John H., W. J. Guy, and W. L. Watney. 1997. The Integration of Pore Measurements into Log Analysis Pattern Recognition Procedures: Methods and Examples. AAPG Annual Convention, Dallas, Texas, April 6-9.

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Russell Petroleum

Optimizing the Air Flotation Water Treatment Process

Contract Number: G4S50904

Publications

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DOE Publications from the Class Program

The following DOE publications on the Class Projects are available from the U.S. Department of Energy's National Petroleum Technology Office free of charge. Contact Viola Rawn-Schatzinger (see Contact List, page iv)

Project Operator	Project Number	Code	Location	Report Type
Class I				
Amoco	BC14963-10	96001225	W. Hackberry F. LA	1994/5 Annual
Amoco	BC14963-16	96001287	W. Hackberry F. LA	1995/6 Annual
Diversified Operating	BC14954-5	95000170	Sooner U. CO	1993 Annual
Diversified Operating	BC14954-14	96001265	Sooner U. CO	Final
Hughes Eastern	BC14962-7	95000177	N. Blowhorn F. AL	1994 Annual
Hughes Eastern	BC14962-10	96001218	N. Blowhorn F. AL	1995 Annual
Hughes Eastern	BC14962-16	97008691	N. Blowhorn F. AL	1996 Annual
Lomax Exploration	BC14958-8	95000113	Green River Fm. UT	1994 Annual
Lomax Exploration	BC14958-11	95000182	Green River Fm. UT	1995 Annual
Lomax Exploration	BC14958-15	96001264	Green River Fm. UT	Final
Texaco E & P	BC14960-8	95000173	Port Nueces F. TX	1994 Annual
University of Kansas	BC14957-7	95000161	Stewart/Savonburg KS	1993/4 Annual
University of Kansas	BC14957-14	96001242	Stewart/Savonburg KS	1994/5 Annual
University of Kansas	BC14957-16	96001261	Stewart/Savonburg KS	1995/6 Annual
University of Texas BEG	BC14959-13	95000160	Vicksburg Fault Z. TX	1994 Annual
University of Texas BEG	BC14959-15	95000190	Vicksburg Fault Z. TX	Topical
University of Texas BEG	BC14959-17	96001211	Vicksburg Fault Z. TX	1994/5 Annual
University of Texas BEG	BC14959-21	96001255	Vicksburg Fault Z. TX	Final
University of Tulsa	BC14951-5	94000137	Glenn Pool F. OK	1993/4 Annual
University of Tulsa	BC14951-10	95000146	Glenn Pool F. OK	1994/5 Annual
University of Tulsa	BC14951-16	96001236	Glenn Pool F. OK	1995/6 Annual
University of Tulsa	BC14951-19	97007190	Glenn Pool F. OK	1996/7 Annual
Utah Geological Survey	BC14953-10	95000171	Bluebell F. UT	1994 Annual
Utah Geological Survey	BC14953-14	96001227	Bluebell F. UT	1995 Annual
Utah Geological Survey	BC14953-19	96001297	Bluebell F. UT	1996 Annual

Project Operator	Project Number	Code	Location	Report Type
Class II				
Fina Oil & Chemical	BC14989-10	96001262	North Robinson F. TX	1994/5 Annual
Fina Oil & Chemical	BC14989-11	96001263	North Robinson F. TX	1995/6 Annual
Fina Oil & Chemical	BC14989-14	96001271	North Robinson F. TX	Topical
Laguna Petroleum	BC14982-12	98000462		1996/97 Annual
Luff Exploration	BC14984-5	95000186	Williston Basin MT, ND	1994 Annual
Luff Exploration	BC14984-10	96001254	Williston Basin MT, ND	1995 Annual
Luff Exploration	BC14984- on hold		Williston Basin MT, ND	Topical
Michigan Tech. Univ.	BC14983-5	95000181	Crystal F. MI	1994/5 Annual
Michigan Tech. Univ.	BC14983-9	96001240	Crystal F. MI	1995/6 Annual
Michigan Tech. Univ.	BC14983- in press		Crystal F. MI	1996/7 Annual
Oxy, USA	BC14990- in press		W. Welch F. TX	Budget Period 1
Phillips	BC14991-7	96001234	S. Cowden F. TX	1994/5 Annual
Phillips	BC14991-11	96001283	S. Cowden F. TX	1995/6 Annual
Phillips	BC14991-13	96000461	S. Cowden F. TX	1996/97 Annual
Texaco E & P	BC14986-3	95000142	Central Vacuum F. NM	1994 Annual
Texaco E & P	BC14986-11	96001252	Central Vacuum F. NM	1995 Annual
University of Kansas	BC14987-5	96001245	Schaben F. KS	1995 Annual
University of Kansas	BC14987-10	97008689	Schaben F. KS	1996 Annual
Utah Geological Survey	BC14988-8	96001268	Paradox Basin UT	1995/6 Annual
Utah Geological Survey	BC14988-9	9601301	Paradox Basin UT	1996/7 Annual

Project Operator	Project Number	Code	Location	Report Type
Class III				
ARCO	BC14940-5	96001285	Yowlumne F. CA	1995/6 Annual
Chevron	BC14938- in press		Buena Vista Hills F. CA	1996 Annual
City of Long Beach-Water	BC14934-7	96001299	Wilmington F. CA	1995/6 Annual
City of Long Beach-Steam	BC14939-8	97008690	Wilmington F. CA	1995 Annual
Pacific Operators Offshore	BC14935- in press		Carpinteria F. CA	1996 Annual
Parker & Parsley	BC14942-4		Spraberry Trend TX	1996 Annual
Strata	BC14941-6	97008428	Nash Draw F. NM	1996 Annual
University of Texas BEG	BC14936-5	96001244	Delaware Basin TX	1995 Annual
University of Texas BEG	BC14936-9	98000456	Delaware Basin TX	1996 Annual