



**EXHIBIT(S)  
FOR  
ORDER NO(S).**

527 - 4



## **Whiting Oil & Gas Corporation**

**Setback Application for the Iles & Sego, Mesaverde Group**

**Township 2 and 3 South, Range 97 and 98 West,  
Rio Blanco County, Colorado**

**Cause No. 527  
Docket No. 0708-SP-20**

**August 2006**

## **Table of Exhibits**

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- L1 Map showing WOGC Iles 200' setback application area

### **Geology**

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- G2 Rollins structure base map indicating wells producing from Iles & Sego
- G3 Diagrammatic regional stratigraphic correlation chart for the Mesaverde Group, Piceance Basin
- G4 Type log and generalized depositional environments for the Mesaverde Group
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- E1. Historical Iles spacing/density hearings presented before the COGCC
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- E3. Single well economic evaluation for Iles and Sego only development
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- E5. Potential drainage pattern with 400' Iles setback
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- E7 Summary of conclusions and recommendations

### **Resumes**

- 1 Bill R. Moomey - Landman
- 2 Dalton L. Rasmussen - Geologist
- 3. Tom Smith - Engineer

# **Bill R. Moomey**

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(303) 690-7478 H

## **PROFESSIONAL EXPERIENCE:**

### **WHITING PETROLEUM CORP., DENVER, CO**

#### **(April, 2005 – Present) Regional Land Manager, Central Rockies**

Responsible for all land related activities for the States of Colorado, Wyoming, Utah, Western Montana and California Supervise one other Landman

### **INDEPENDENT PETROLEUM LANDMAN, DENVER, CO**

#### **(October, 1986 – April, 2005)**

Worked with various independent geologists and geophysics putting together geological prospects for drilling by third parties Did land consulting work with various companies as time permitted

### **CENTURY OIL & GAS CORPORATION, DENVER, CO**

#### **(October, 1981 – January, 1986) Vice President, Land**

Was responsible for all land activities for the company to include the lease records department Supervised one landman and three lease records personnel

### **MARATHON OIL COMPANY, CASPER, WY**

#### **(April, 1974 – October, 1981) Various Land Assignments**

(Sept , 1980 – Oct , 1981) – Responsible for office in Denver, Colo to represent Marathon Oil Co to the industry in the Denver area

(Aug , 1979 – Sept , 1980) – Team Leader for the Green River Basin area Supervised Two geologists, one geophysics and one landman

(Apr , 1974 – Aug , 1979 – Senior Landman responsible for general land work for areas assigned to include oil and gas leasing, contract administration, etc

### **MARATHON OIL COMPANY, GRAND RAPIDS, MICH**

#### **(February, 1969 – April, 1974) Sales Representative, Retail Marketing Department**

Responsible for service stations, bulk plants and company jobbers for the western most part of the State of Michigan Office was out of my home in the Grand Rapids, Michigan Area with supervisor located in Lansing, Michigan

## **EDUCATION:**

**1968** Central Michigan University -- B S B A

**1979** Marathon Oil Company Management Practices Program

## **ORGANIZATIONS:**

American Association of Professional Landmen  
Denver Association of Petroleum Landmen  
Wyoming Association of Professional Landmen  
Landman's Association of North Dakota

**DALTON L. RASMUSSEN**  
Petroleum Geologist  
Whiting Petroleum Corporation  
1700 Broadway, Suite 2300  
Denver, CO 80290-2300  
303.390.4093  
[larryr@whiting.com](mailto:larryr@whiting.com)

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## **PROFESSIONAL EXPERIENCE**

Oct 2004 – Present

**Geologist, Central Rockies**  
**Whiting Petroleum Corporation**  
**Denver, Colorado**

Construct detailed geologic framework for the northern Piceance basin, and build multi-well exploration plan with targets in Tertiary and Cretaceous reservoirs, manage 16-well development program at Hiawatha gas field in Moffat County, Colorado, develop operated properties, and generate and evaluate prospects in Colorado, Utah, Wyoming and Montana

Dec 2003 – Oct 2004

**Manager of Geoscience**  
**Platte River Associates, Inc.**  
**Boulder, Colorado**

Managed a geologic staff of four employees responsible for quality assurance testing of company software, technical support, consulting services and marketing, consulted to international petroleum exploration companies to analyze hydrocarbon charge potential and risk for plays and prospects, coordinated and conducted training seminars that focused on theory and practical application of basin analysis and petroleum system analysis, maintained strong relationships with international clientele, fostered growth through software marketing and sales

Nov 2000 – Dec 2003

**Staff Geologist, Software Specialist**  
**Platte River Associates, Inc.**  
**Boulder, Colorado**

Generated revenue via marketing software to international exploration companies, expanded and retained customer base resulting in increased revenue stream, consulted on international exploration projects, coordinated and conducted software training courses, oversaw quality assurance testing of software, provided technical support

Sept 1995 – Nov 2000

**Staff Geologist, Software QA Tester**  
**Platte River Associates, Inc.**  
**Boulder, Colorado**

Conducted all quality assurance testing of company software on PC and UNIX platforms, contributed to software documentation, provided technical customer support, prepared marketing materials, wrote software requirements

May 1994 – May 1995

**Research Assistant**  
**U.S. Geological Survey**  
**Reston, Virginia**

Collected and prepared bulk samples, and identified fossil material for the purpose of constructing a biostratigraphic and lithostratigraphic framework for the late Tertiary and Quaternary of southern Florida

Aug 1993 – May 1995

**Graduate Teaching Assistant**  
**Old Dominion University**  
**Norfolk, Virginia**

Conducted geology laboratories for beginning and advanced undergraduate geology courses, tailored lab curriculum to reinforce topics covered during lecture

July 1992 – July 1993

**Geologist**  
**Rocky Mountain Geological Databases, Inc**  
**Denver, Colorado**

Collected geology and production data for the Paradox Basin, correlated well logs and constructed geologic cross sections

May 1989 – May 1992

**Geologist**  
**Platte River Associates, Inc.**  
**Denver, Colorado**

Digitized land grid from USGS topo quads, tested DOS- and Windows-based basin modeling applications

## **EDUCATION**

May 1997

**M.S. Geology**  
**Old Dominion University**  
**Norfolk, Virginia**

Aug 1990

**B.A. Geology**  
**University of Colorado**  
**Boulder, Colorado**

## PUBLICATIONS AND EXHIBITIONS

**Rasmussen, D L.**, D L Rasmussen, R J Coskey, 2004, Analysis of the Pennsylvanian petroleum system in the Paradox Basin fold and fault belt, Colorado and Utah, AAPG Rocky Mountain Section Meeting

Rasmussen, D L , **D.L. Rasmussen**, 2004, New gas plays in fractured organic-rich shales and their interbeds in the eastern Paradox Basin of Colorado and Utah, AAPG Rocky Mountain Section Meeting

Rasmussen, D L , **D.L. Rasmussen**, 2004, Gas Play in stacked dolomitized Pennsylvanian carbonates on the south rim of the Paradox Basin, extending through parts of Colorado, New Mexico, Arizona and Utah, AAPG Rocky Mountain Section Meeting

Williams, G , V Matt, C N Wold, A Spargo, **D.L. Rasmussen**, R Bouroullec, P Weimer, J E Leonard, M W Titus, 2004, Application of 4-D petroleum system analysis to the northeastern deep Gulf of Mexico, AAPG International Meeting

**Rasmussen, D.L.**, D L Rasmussen, 2003, Pennsylvanian Hermosa Group depositional trends during progressive burial of pre-Hermosa terrain in the early structural history of the Paradox Basin, Utah and Colorado, AAPG Annual Meeting

Rasmussen, D L , **D.L. Rasmussen**, 2003, Lithofacies and sequence stratigraphy from well logs for the cyclic Morrowan to Wolfcampian Hermosa Group strata, Paradox Basin, Utah and Colorado, AAPG Annual Meeting

Rasmussen, D L , **D.L. Rasmussen**, 2002, Sequence stratigraphy of the late Pennsylvanian to early Permian Honaker Trail and Elephant Canyon strata, Paradox Basin, Utah and Colorado, AAPG Rocky Mountain Section Meeting

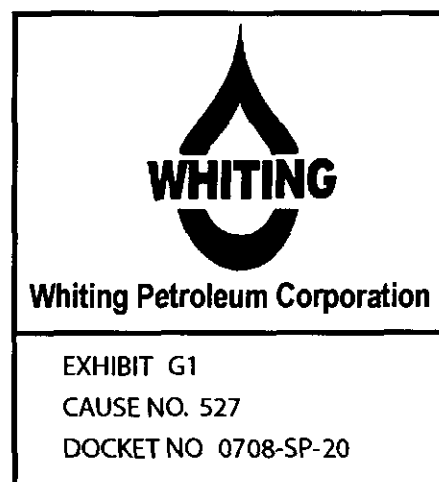
Wold, C N , R J Coskey, **D.L. Rasmussen**, J E Leonard, 1999, How modern petroleum system modeling tools could have reduced risk at different stages of exploration in the Powder River Basin, AAPG Annual Meeting

Wold, C N , R J Coskey, **D.L. Rasmussen**, J E Leonard, 1999, Structural influence on the evolution of petroleum systems in the Powder River Basin, Hedberg International Conference

Liu, J , C O Leonard, **D.L. Rasmussen**, 1996, A quantitative study of the petroleum generation and migration development in the Tarim Basin, China, AAPG Annual Meeting

## **Basis for completing the Iles and Sego at 10-acre density**

- I. Two geologic models support 10-acre density
  - a Conforms to the Williams Fork fluvial sand body model – coastal plain fluvial sandstone bodies in the upper Corcoran and Cozzette members are of limited lateral extent and isolated/sealed in mudstone
  - b Conforms to the Iles shoreface sandstone model – increased density in the Iles has been granted on four separate occasions on the basis of this model which demonstrates a heterogeneous, compartmentalized reservoir with low and discontinuous reservoir properties
- II Well economics supports 10-acre density
  - a The amount of gas in place in the Iles/Sego is not sufficient to make an Iles/Sego well economic on its own – it is only economic when produced along with gas from the Williams Fork A significant amount of gas will be left behind if the Iles and Sego are not drilled and produced along with the Williams Fork





**Thomas B. Smith, P.E.**

7934 S Gaylord Ct  
Centennial, CO 80122  
303 638 8224  
toms@whiting.com

**Summary of Work Experience**

**July 2004- present    Sr. Operations Engineer, Whiting Petroleum Corporation    Denver, CO**

Oversee all phases of operations and completion engineering for the Central Rockies area, including oil and conventional gas properties. Areas include Piceance Basin, Green River Basin, Big Horn Basin, Sacramento CA Basin, and Uinta Basin. I am responsible for optimizing existing production and overseeing infill development of these areas which are currently producing at a total rate of 2000 BOPD and 16 MMCFPD. I supervise 2 Company foremen and several company field employees and several contract pumpers in the smaller fields. I work on an asset team with geologist and land department support to plan and execute capital development projects in my areas and in new exploration/exploitation plays. I am presently managing completion and facilities installation following behind 2 drilling rigs in the Piceance Basin.

**September 2003-July 2004    Petroleum Engineering Consultant    Denver, CO**

Various consulting/professional engineering jobs in Denver area

**January 2002-September 2003    Sr. Reservoir Engineer    Denver, CO**

Worked as a Senior Reservoir Engineer in Marathon's Powder River Business Unit, based in Denver, CO, with field operations in the Gillette, Wyoming area. My responsibilities included Coal Bed Methane reservoir engineering, production engineering, and drilling engineering to some degree, mainly assisting with drilling techniques and new processes for cutting drilling costs in the Coal Bed Methane play. I also assisted with the engineering and economic evaluation of undeveloped and producing property trades and acquisitions. I recommended and designed remedial well work, stimulation, and cementing in the Coal Bed methane play, overseeing approximately 1600 producing CBM wells. My drilling budget in 2003 consisted of approximately 200 wells in several known field areas with several pilot coal projects in newly formed Federal Exploratory Units. I was responsible for the economic analysis of projects, budget preparation and presentation to management, production forecasting and expense forecasting for my areas of responsibility. I was responsible for overseeing and performing all of Marathon's engineering expert witness functions at the Wyoming Oil and Gas Commission. I was successful in obtaining a large number of exception locations, blower applications, and spacing rulings over the past 18 months. I was involved in the testing of several new CBM production-related products in the field, several of which I have patent applications undergoing review.

**November 2000 – December 2001    Sr. Reservoir Engineer    Midland, TX**

Worked as a Senior Reservoir Engineer in Marathon's Southern Business Unit's Business Development Group, based in Midland, TX. My responsibilities included asset trade and acquisition recommendations, disposition evaluation and portfolio rationalization, and new business opportunity advancement. I have evaluated several \$300MM plus acquisition opportunities and prepared detailed

acquisition recommendations to the Board of Directors of the company during this period. We were unsuccessful in our bids due mainly to the state of the acquisition market that year. At the time of my transfer to Denver I was working on several asset trade opportunities that allow Marathon to "core up" its assets in several key producing areas. My areas of knowledge and expertise include gas plays in East Texas, South Texas, North Louisiana, and the Rockies (oil and gas plays).

**August 1998 – November 2000      Sr. Reservoir Engineer      Tyler, TX**

Worked as a Senior Reservoir Engineer in Marathon's Tyler, TX business unit, which was merged with the Midland, TX office in November 2000 as a part of a company restructuring effort. My responsibilities in Tyler were similar in scope as those I mentioned above. The business development groups' efforts in Tyler were focused primarily on expanding our presence into South Texas in the Frio and Vicksburg gas plays. I was a member of a task force that was charged with preparing a business model for expansion into S. Texas, and presenting the findings to executive management for approval. Our team was successful in convincing management that S. Texas was a viable business opportunity for Marathon in the Onshore U.S. Shortly after our recommendations were approved, a change in Sr. Management due to retirements led to a reassessment of the growth areas for the company. The direction was changed from onshore U.S. gas growth to primarily high impact international growth, thus the S. Texas expansion was bypassed. On a more positive note, however, our Business Dev. team was successful in a \$50MM acquisition of tight gas assets in the Oletha Field, Limestone Co., TX, which we have since drilled 15 wells and more than doubled the previous operators gas production rate and proven reserves.

**November 1996 – August 1998      Advanced Reservoir Engineer      Cody, WY**

Worked as an Advanced Reservoir Engineer in Marathon's Rocky Mountain Region with responsibilities for coordinating an exploitation/exploration effort located in the Greater Green River Basin in Southwest Wyoming. Marathon had entered into an Exploration Agreement with Celsius Energy to shoot a large 3-D survey to earn an interest in a large, under-exploited area called the Vermillion Basin. My role as the technical committee leader was to maintain proper communication between the two companies, organize technical meetings to discuss well proposals, completions, and budget forecasts. Marathon was successful in drilling a \$4.5 MM well that came on at over 12 MMcf/d and has an EUR of over 13 BCF as the initial drill well under the agreement. The well employed several new techniques such as an open-hole, natural completion and a directionally drilled, highly deviated well bore to intersect natural fractures which were identified as being key to the deliverability of gas from the tight Nugget Sand. This was an example of using applicable technology to insure potential business opportunities are not overlooked or missed. I worked with a team consisting of land, geology, geophysics, and engineering professionals during this period of time. My understanding of 3-D seismic and structural geology was greatly enhanced, as was my understanding of exploration risk management and the methods for properly risking and ranking various exploration projects. This experience allowed me to easily understand the South Texas faulted sand reservoirs and how 3-D seismic has been applied successfully to fuel reserve growth in the last 8 years.

**November 1994 – November 1996      Advanced Reservoir Engineer      Cody, WY**

I was assigned to the Business Development Group in Cody, Wyoming working mainly on acquisition evaluations. During this period of time, I was placed on a team that was charged with evaluating the potential for gas growth in Southwest Wyoming. As a result of that work, we were able

to convince Celsius Energy to partner with us under an Exploration Agreement that covered over 130 square miles in Southwest Wyoming and Northwest Colorado. I was responsible for preparing a business model for the project and presenting the economics to the Board of Directors for approval to proceed. We were successful in our efforts and were granted approval to enter into the Agreement. This was my first real exposure to a large exploration/exploitation project and gave me valuable experience in project management and business economics.

**January 1993 – November 1994      Advanced Reservoir Engineer      Cody, WY**

I was assigned to a staff Reservoir Engineering position with responsibility for the development of several fields under water flood and miscible gas flood in Wyoming and the a gas injection project in the Morrow Sand in Eastern Colorado. I prepared AFE's for infill drilling, recompletions, and a gas injection project. I was involved in reserve bookings, budgeting and performance monitoring via reservoir simulation. I presented at several operating committee meetings with regard to new well proposals and performance of the secondary recovery processes.

**September 1990 – January 1993      Field Sup't/Prod. Foreman      Grass Cr., WY**

I worked as a Field Superintendent and Production Foreman at Marathon's Grass Creek Field. This field produced about 10,000 BOPD from stacked reservoirs under water flood and polymer flood. The field employed about 40 company and 10 full time contractors, not including drilling and workover crews. I was responsible for all supervisory aspects at this remote field location, and reported to a Operations Sup't located 50 miles away. Our main focus was in keeping lifting costs low, maintaining a safe and environmentally clean operation, and minimizing production downtime in order to meet production goals. The fields were initially discovered in the early 1920's, so there were numerous old well bores and plugging of wells was ongoing and rather commonplace. This experience has served me well over the years as a good base of knowledge of surface facilities, down hole operations, and field supervision of employees.

**September 1987 – September 1990      Workover/Completions Supv.      Grass Cr., WY**

I worked as a Workover and Completions Supervisor based at Marathon's Grass Creek Field. I was responsible for supervising contract completion rigs that were performing completion and workover operations. I was involved performing deepenings, sidetracks, casing liner installations, supervising frac and acid jobs and supervising fishing operations. This was a great way to learn the mechanical aspects of down hole operations, and prepared me well for future assignments in more adverse and higher cost environments.

**May 1981 – September 1987      Production Engineer      Cody, WY**

During this time period I was a production and facilities engineer assigned to several different field areas, all under water flood. At that time, infill drilling and injection conformance improvement methods were being used to improve sweep efficiency from old water floods that had been neglected during low oil price periods. I performed the typical engineering tasks like writing up well work proposals, obtaining bids for pumping equipment, scheduling projects, and preparing cost estimates for surface and down hole projects. I was responsible for the design and construction of a \$3MM polymer injection project in the Grass Creek Field. I was introduced to process control and instrumentation during this time, and became familiar with construction procedures and design of surface oil treating and water handling facilities.

## **EDUCATION**

- |           |  |
|-----------|--|
| 1981      | B S PETROLEUM ENGINEERING WITH HIGH HONOR, MONTANA<br>TECH, BUTTE, MONTANA               |
| 1981-2007 | NUMEROUS OIL & GAS INDUSTRY SCHOOLS, TRAINING<br>SESSIONS, SPE TECHNOLOGY WORKSHOPS, ETC |

## **PROFESSIONAL TRAINING AND LICENSES**

- |              |   |
|--------------|---|
| 1986-Present | REGISTERED PROFESSIONAL ENGINEER - STATE OF WYOMING       |
| 1990         | OSHA COMPETENT PERSON TRAINING - TRENCHING AND<br>SHORING |
| 1991-2006    | HAZARDOUS MATERIALS TECHNICIAN LEVEL TRAINING             |
| 1991         | JOYMAI OIL SPILL RESPONSE TRAINING                        |
| 1992         | CRISIS COMMUNICATION TRAINING                             |

## **PROFESSIONAL AND INDUSTRY AFFILIATIONS**

SOCIETY OF PETROLEUM ENGINEERS - 26 YEAR MEMBER, LOCAL CHAPTER OFFICER  
POSITIONS

GAS RESEARCH INSTITUTE

## **PUBLICATIONS AND PATENTS**

- |      |  |
|------|--|
| 1988 | <b>SPE/DOE 17383</b> <u>Field Testing of a New Conformance Improvement Cr+3 Gel<br/>Technology</u> |
| 2003 | Patents under application for CBM production equipment   |



Iles/Sego development under the application lands. Note the amount of potential drainage ellipse overlap and the inefficient drainage on the top and bottom of the 40 acre blocks. Note that only 4 Williams Fork/Iles /Sego wells can be drilled on the 80 acres shown, developing only one half the potential Iles/Sego resource base. While four additional Williams Fork only wells could be drilled, the current restrictive downhole setbacks for the Iles Formation disallow that formation to be drilled and produced in these four Williams Fork wells. It is therefore prudent to allow relaxed setback rules applicable to downhole locations within the Iles Formation to minimize economic waste and maximize resource recovery.

- g Exhibit E-6 is a depiction of the potential drainage patterns with 200' lease line setbacks on two adjacent 40 acre parcels that are proposed for Iles/Sego development under the application lands. Note the lack of drainage ellipse overlap and the more complete coverage on the top of the 40 acre blocks. It should also be noted that additional 4 wells could be drilled and produced within the Iles Formation using this pattern.
- h Exhibit E-7 is a Summary of the important conclusions and recommendations for the application lands. The primary recommendation is to allow the Iles/Sego formation to be developed with the identical setback rules applicable to the Williams Fork Formation. This would allow the 13 BCF of gas currently available within the Iles/Sego formations underlying the application lands to be developed in conjunction with the Williams Fork formation.

By \_\_\_\_\_  
Thomas B. Smith

Subscribed and sworn to before me this \_\_\_\_\_ day of August, 2007 by Thomas B. Smith, Senior Operations Engineer of Whiting Petroleum Corporation.

Witness my hand and official seal

My commission expires \_\_\_\_\_

\_\_\_\_\_  
Notary Public

**SUMMARY OF ILES FORMATION**  
SPACING/DENSITY HEARINGS BEFORE THE COGCC

	ORDER NUMBER			
	139-46	139-51	191-10	191-25
APPLICANT	ENCANA	NOBLE ENERGY	BILL BARRETT	ANTERO RESOURCES
DATE OF HEARING	3/22/2005	10/31/2005	4/25/2005	6/5/2006
ORDER SPACING/DENSITY (ACRES)	20	10	10	10
ILES FORMATIONS ANALYZED	COZZETTE / CORCORAN	ROLLINS / COZZETTE / CORCORAN	ROLLINS/ COZZETTE/ CORCORAN	COZZETTE / CORCORAN
FEET PAY		24 - 40		74 - 83
POROSITY %	10			8 5 - 9 1
GAS SATURATION (%)				60 - 70
ILES OGIP/10 ACRES (MMCF)	296	300		332 - 525
ILES EUR (MMCF)	350 **	49	110	113 - 550
DRAINAGE AREA (ACRES)		7 9		4 9 - 14
IP	300		160 MCFD *	

\* BASED ON 28 TESTS

\*\* EUR BASED ON 20 ACRE DEVELOPMENT



**Whiting Oil and Gas Corporation**

Exhibit E-1

Cause 527

Docket No 0708-SP-20

## Volumetric Calculation of Original Gas-in-Place for Iles and Sego Formations

	Feet of Pay, ft	Porosity, %	Water Saturation, %	Bgi, rcf/scf	OGIP/Ac, MMCF/AC	OGIP/ 10 Acre, MMCF
<b>Rollins</b>	7	10.6	46.0	0.0040	4.3	42.8
<b>Cozzette</b>	23	11.3	43.5	0.0040	16.0	159.7
<b>Corcoran</b>	24	9.6	43.7	0.0040	14.4	144.3
<b>Sego</b>	7	10.4	48.0	0.0040	4.1	41.3
<b>Total/Avg</b>	<b>61</b>	<b>10.5</b>	<b>45.3</b>		<b>38.8</b>	<b>388.1</b>

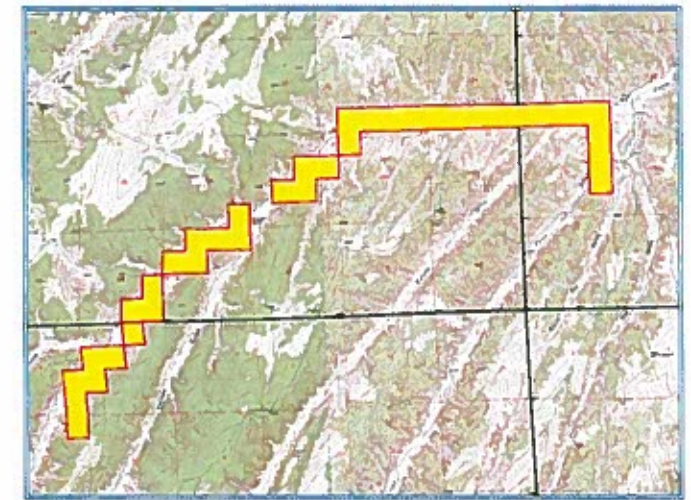
### Assumptions:

BH Temperature = 220 F

BH Pressure = 4850 psi

### Estimate of Iles Original Gas In Place for Application Lands

1440 Acres x 38.8 MMCF/AC = 56 BCF



Whiting Oil and Gas Corporation

Exhibit E-2

Cause 527

Docket No. 0708-SP-20

# Single Well Economic Evaluation for Iles and Sego Only Development

## Assumptions:

Original Gas In Place – Iles and Sego, MMCF (10 Acres)	388
Recovery Factor	70%
Gross Ultimate Recovery - Gas, MMcf	272
First Month Gas Production, Mcfd	350
Royalty Burden	12.5%
Severance and Ad Valorem Taxes	8.0%
Gross Drilling and Completion Costs, \$M (11,000' test, assume 3 completion intervals)	2,500
Monthly Lease Operating Costs, \$m	3.3
Gas Gathering and Treating Expenses, \$/Mcf	0.50
Shrinkage and Fuel	6.0%

## Product Pricing:

Gas Price, \$/MCF (flat NYMEX Price of \$6.79/MMBtu, less \$0.75 differential)	6.15
BTU Content, Btu/scf	1,153

## Economic Summary:

Undiscounted Payout, yrs	Does not pay out
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Whiting Oil and Gas Corporation

Exhibit E-3

Cause 527

Docket No. 0708-SP-20

# Single Well Economic Evaluation

## Incremental Evaluation of Adding Iles and Sego Completions to a Willams Fork Test

### Assumptions:

Original Gas In Place – Iles and Sego, MMCF (10 Acres)	388
Recovery Factor	70%
Gross Ultimate Recovery - Gas, MMcf	272
First Month Gas Production, Mcfd	350
Royalty Burden	12.5%
Severance and Ad Valorem Taxes	8.0%
Incremental Gross Drilling and Completion Costs, \$M (drill an additional 1,400' to Iles, and, assume 3 completion intervals in Iles)	434
Monthly Lease Operating Costs, \$m	3.3
Gas Gathering and Treating Expenses, \$/Mcf	0.50
Shrinkage and Fuel	6.0%

### Product Pricing:

Gas Price, \$/MCF (flat NYMEX Price of \$6.79/MMBtu, less \$0.75 differential)	6.15
BTU Content, Btu/scf	1,153

### Economic Summary:

Undiscounted Payout, yrs	1.9
Undiscounted Return on Investment	1.8 to 1
Exceeds Whiting Oil and Gas Requirements	

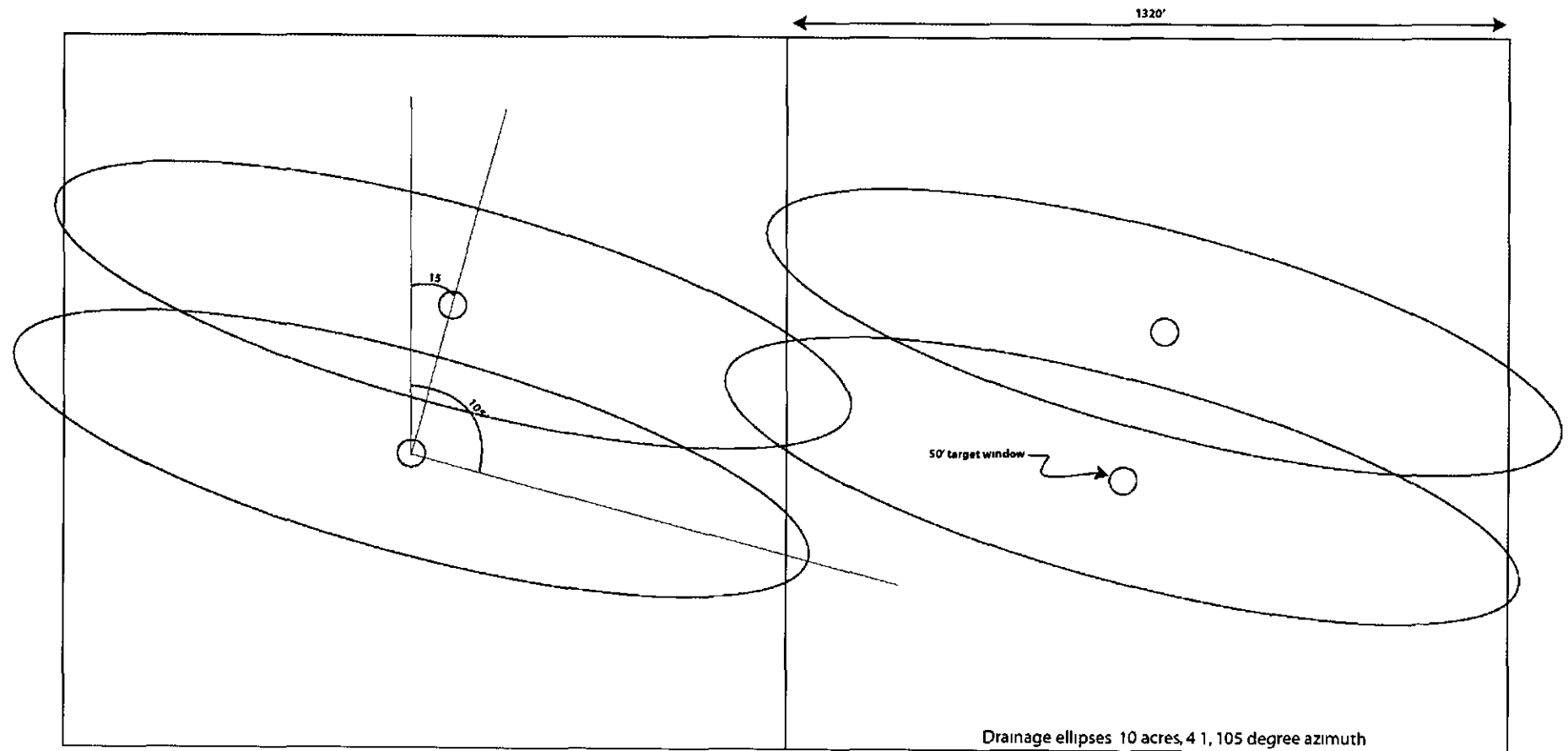


Whiting Oil and Gas Corporation

Exhibit E-4

Cause 527

Docket No. 0708-SP-20



Placement of wells in two adjacent 40-acre blocks with 400' well setback

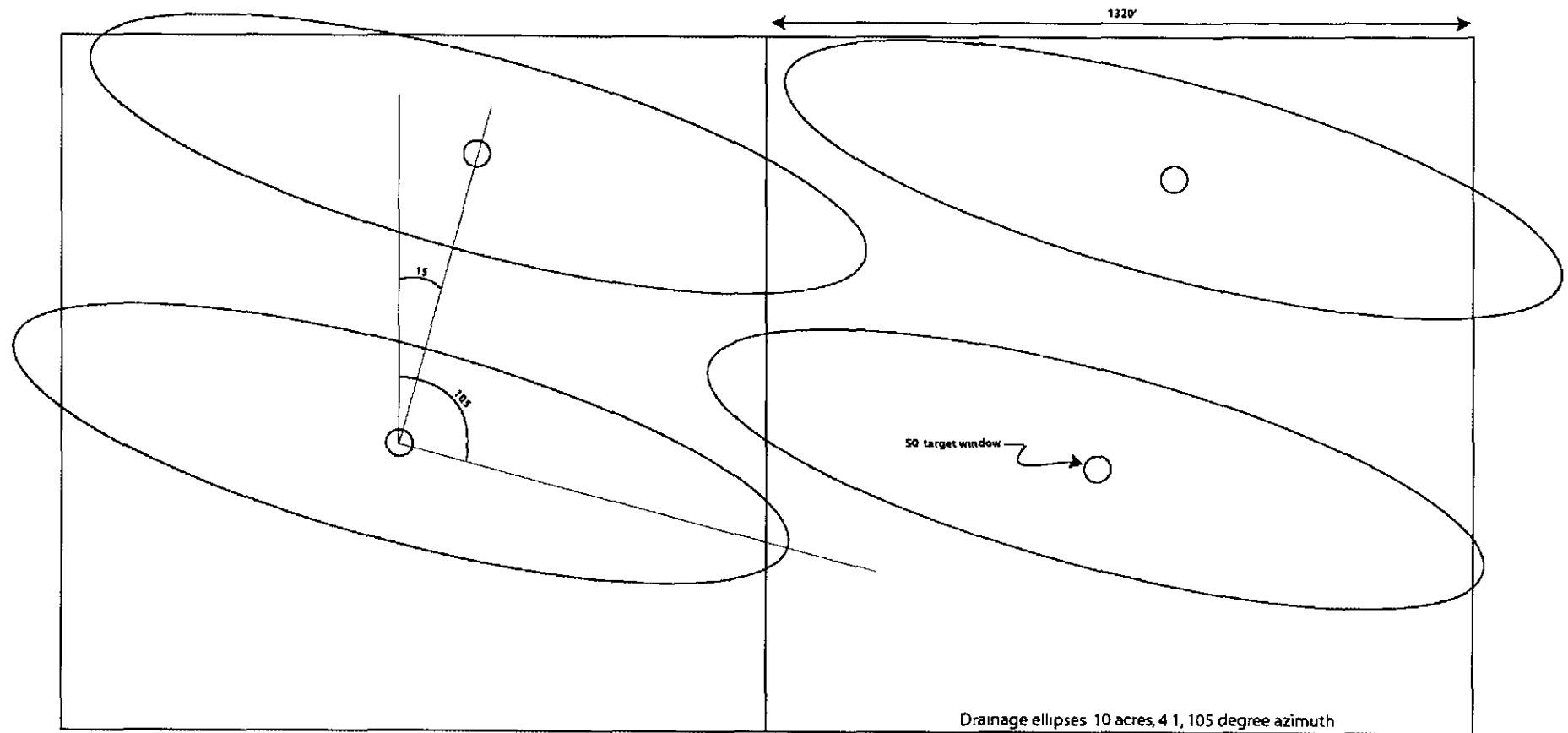


**Whiting Oil and Gas Corporation**

Exhibit E5

Cause 527

Docket No 0708-SP-20



Placement of wells in two adjacent 40-acre blocks with 200' well setback



Whiting Oil and Gas Corporation

Exhibit E-6

Cause 527

Docket No 0708-SP-20