

# 2008 WESTERN CANADA DRILLING BENCHMARKING STUDY

I. Conventional & Unconventional Gas; Conventional Oil (New)  
II. SAGD Horizontal Pairs & Core Wells

Wells Drilled Fall 2005 - Summer 2008



## Improve Your Drilling Operations Efficiency & Reliability

- Detailed Time, Cost, or Operational Benchmarking Allows Participants to Reduce their Drilling & Completion Costs Through Focused Application of Successful Practices

## What Clients Say:

*"Participating in the study gave us great insight into our drilling practices and allowed us to derive new ways of improving our performance. We found the study to be an excellent measurement of the industries' performance, which enabled us to benchmark ourselves appropriately."*

Manager of Drilling,  
Large Trust Company

...

*"The scope and format of the study assisted us in focusing on specific areas of improvement. The presentation of the results of the study by your consultant was concise and informative and reflected considerable knowledge of operations. As a result, we have been able to dramatically improve our operational efficiencies and lower our costs."*

Vice President,  
Super-Major

...

*"We got more than what we paid for, which is a pleasure to say. I would recommend this process to any company wanting to move from the 'also ran class' to 'best of class.'"*

Operations Manager,  
Independent Producer

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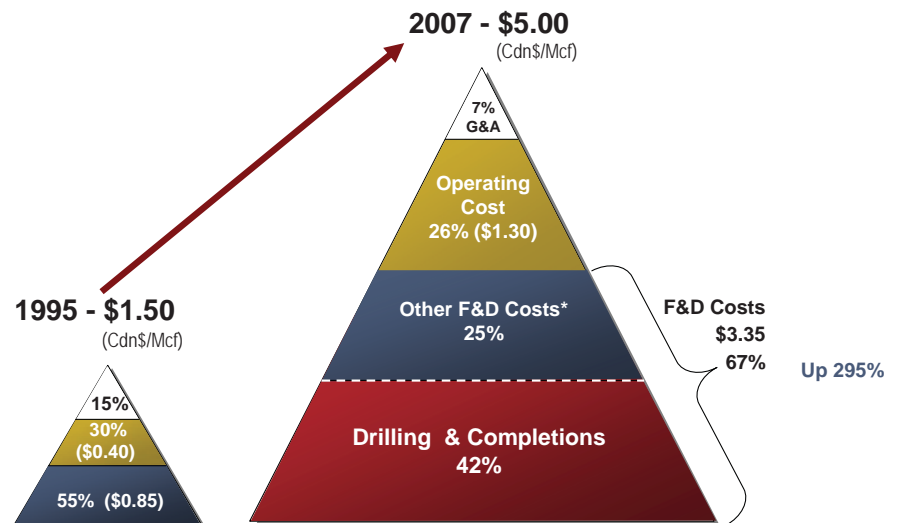
# WESTERN CANADA DRILLING COST BENCHMARKING STUDY

Drilling represents the largest cost component in F&D, over \$7/BOE (\$1.15/Mcf)  
*Minimizing drilling costs is critical to profitability for E&P companies.*

The 2<sup>nd</sup> edition of this bi-annual study provides an independent detailed analysis of the drilling and completion costs on gas properties in the Western Canadian Sedimentary Basin for the 2<sup>+</sup> year period, Fall 2005 to Spring 2008. More than 3,500 wells were benchmarked in the 1<sup>st</sup> edition.

This study will help you reduce your drilling costs by enhancing your drilling performance and efficiency and contribute to a lower Finding & Development cost. We will measure your drilling and completion costs relative to other operators in the study and provide your drilling and completions team with factual data that pinpoints high costs, compared to similar wells, and to assist in reducing the costs of future wells.

## Rising Western Canadian Costs - What Can You Do?



## This study is for you if your company needs:

- a focused approach to evaluate your drilling performance
- consistent, reliable and detailed information to assess the strengths and opportunities for improving your current drilling program
- an understanding of the performance gaps and improvement opportunities in the well construction process
- knowledge of best practices for internal learning.

## Our Methodology:

- **analyzes industry performance** by area/geology, depth range, type of wells
- includes multiple **Performance Metrics**, including cost per meter, meters per day, completion time, and others
- analyzes **Cost Drivers** such as well depth, well profile (vertical, horizontal, multilateral), geology, surface location, hydrogen sulfide, and completion design
- identifies and quantifies **performance gaps** and **improvement opportunities**.

## Key Features:

### I. Oil & Gas (Conventional & Unconventional)

- Conventional Oil & Gas Peer Groups are aligned with established Gas and Oil Strategies and Plays, based on geographical criteria, well total depth, geological target, vertical or horizontal, sweet and sour etc.
- Gas: CBM (HC), Tight Gas, NE BC

### II. SAGD Horizontal Pairs & Core Wells

- **Drilling cost data** is segregated into 14 main standard classifications; the total costs are shown as 56 Sub-Categories of Drilling Costs
- **Completion cost data** is grouped into 12 main standard classifications; 35 cost sub-classifications to provide clients with further insight
- **Drilling time data** is segregated into 5 standard classifications, Completion time data has 3 categories. These categories are divided into a total of 28 sub-categories that can provide further insight into drilling activities.
- Automated data collection.
- Client design meeting.
- **Best Practice Workshop**.

*"We encourage other operators to participate in Ziff Energy's multi-client benchmarking projects. Some of the benefits are:*

- *standardized cost data & peer field comparison*
- *points to areas where we may have gaps in performance*
- *the results encourage us to take a look at our operating metrics and understand the drivers and where to focus our time and efforts*
- *(uptime) reliability metrics force you to consider facility design in future developments*
- *automated data gathering takes effort away from staff, who are stretched these days."*

Vice President,  
Large Independent Producer

...

*"The value for changes we implemented was estimated at \$5,000,000 (per year), a very good return."*

Senior Engineer,  
Major

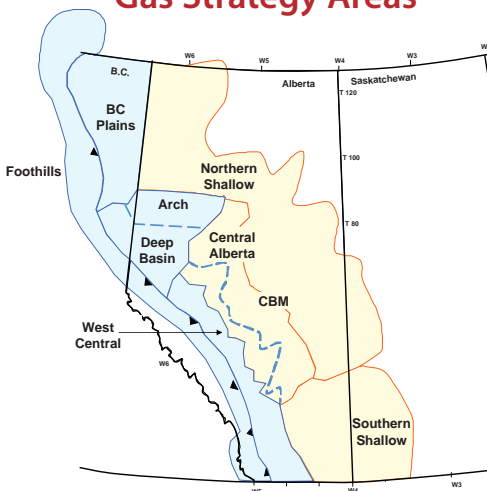
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*"We are pleased with your work ... Ziff's industry workshop was an excellent opportunity to learn and network with the experts. Ziff delivers the full package, a statistically rigorous analysis coupled with real suggestions that can be used to improve operating performance. It is refreshing to work with Ziff's staff, which consists of industry professionals who are knowledgeable and experienced."*

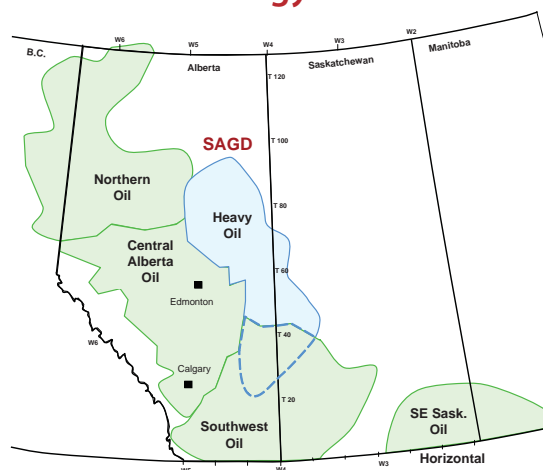
Offshore Development Manager,  
Large Independent Producer

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### Gas Strategy Areas



### Oil Strategy Areas



## Our Deliverables to You:

### *Comprehensive Report*

- in-depth drilling and completion cost analysis
- organized by multiple peer asset categories or groupings of similar fields based on geologic and operational economic considerations
- a proven study designed with considerable input from clients
- Ziff Energy's analysis highlights performance gaps and quantifies improvement opportunities.

### *Private Debriefing*

- identification of tendencies within your organization towards high or low cost bias for each cost category
- provides strong insights into your company's drilling and completion performance provides specific analysis of main improvement opportunities.

**You are invited to participate in this uniquely effective analysis and share in the benefits.**

**Please contact: Paul Ziff, CEO  
(403)234-4276 or 1-800-853-4292**

### Why Ziff Energy?

For more than 20 years, Ziff Energy Group's diverse team of experts has completed more than 150 upstream industry performance studies. Since 1994, Ziff Energy regional studies have assisted more than 100 North American E&P companies to lower operating costs and increase production by comparing their field operating costs against performance for similar gas or oil fields. Eighteen studies have focused on Finding & Development Cost trends in Western Canada.

Our highly qualified project team brings extensive Western Canada industry experience. Ziff Energy completed the largest ever multi-client drilling study on Canadian gas wells (2006) and on deep gas wells in South Texas, examining drilling and completion performance and best practices by many active operators.

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