



OKLAHOMA CORPORATION COMMISSION

Oil and Gas Conservation Division

CoalBed Methane Fact and Future In Oklahoma

November 2004

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Out Lines:

- . **Fact and figures about Coal bed methane**
- . **Regulation for Unconventional Gas Wells**
- . **Activities on Conventional Gas Wells**
- . **Incentive Program, Senate Bill 535**
- . **Horizontal Completion in Counties**
- . **Question /Answer**

Facts and Figures:

Location:

- . North East Oklahoma Shelf**
- . Arkoma Basin**

Geological Age:

- . Desmoinesian (Middle Pennsylvanian)**

Remaining Resources:

- . 8 Billions Ton**

Area of Coverage

- . 8000 square miles in 19 counties**

Production :

- . Total 280 Millions Short Ton (End of 2001)**

Ash Percentage:

- . Minmum 4%, Hartshorne in Leflore**
- . Maximum 15%, Hartshorne in Leflore**

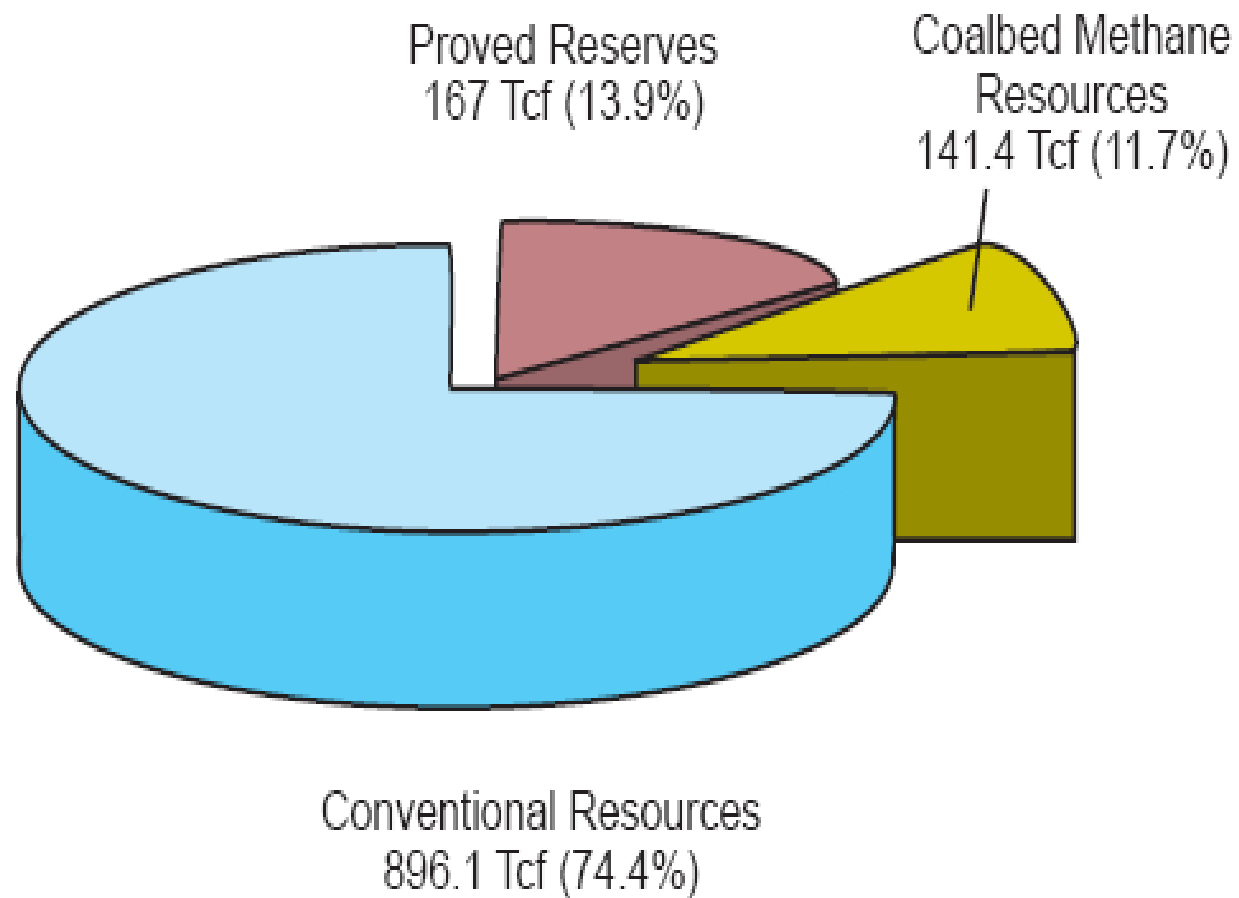
Depth of Completion

- . Minimum 175 ft, Hartshorne in Leflore
- . Maximum 3651 ft , Booch in Pittsburg

SCF/Ton

- . Minimum 79 , Hartshorne in Leflore
- . Maximum 547, Hartshorne in Leflore

Coal Bed Methane Resources



Location of Coal Bed Methane Resources

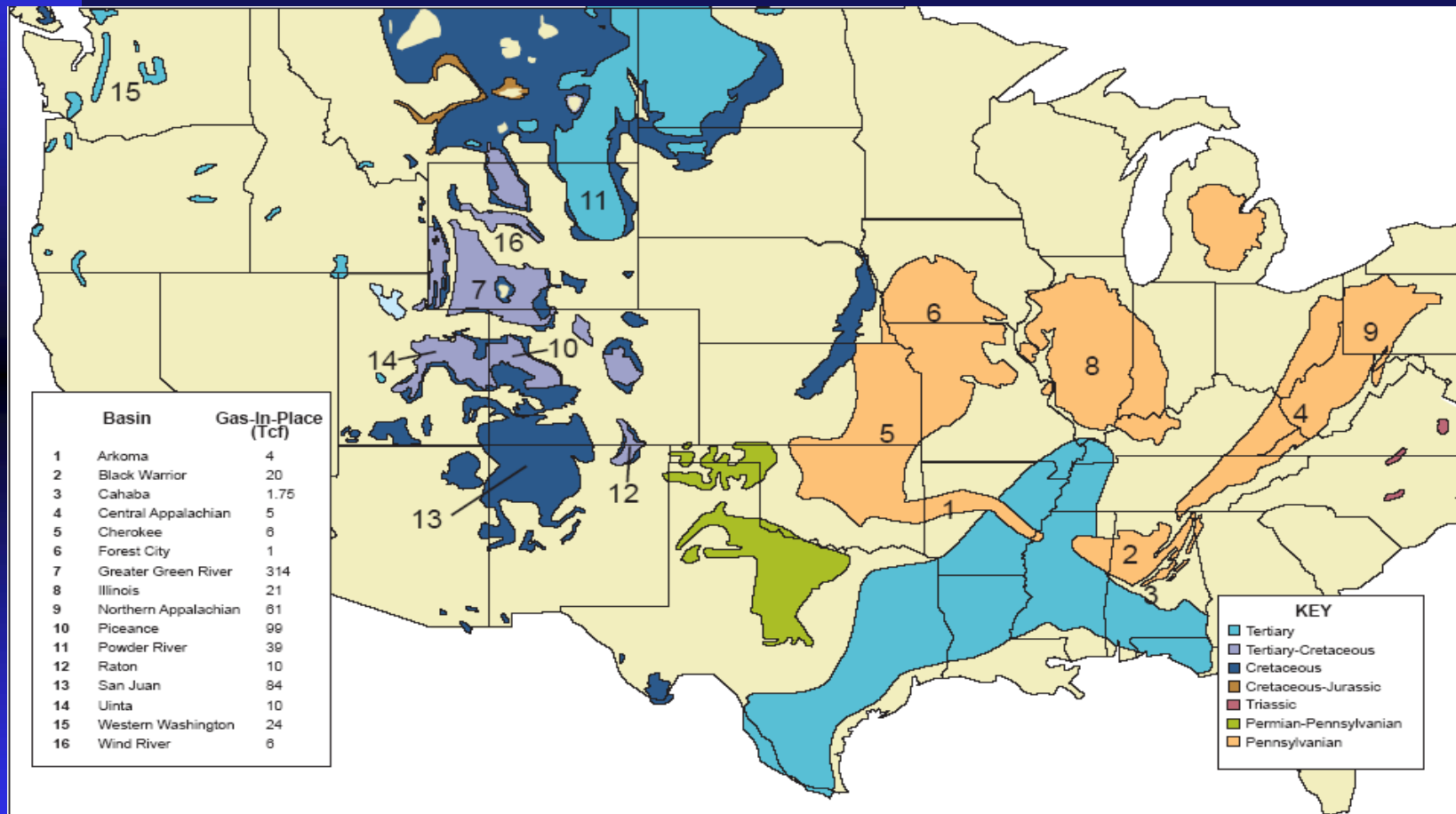
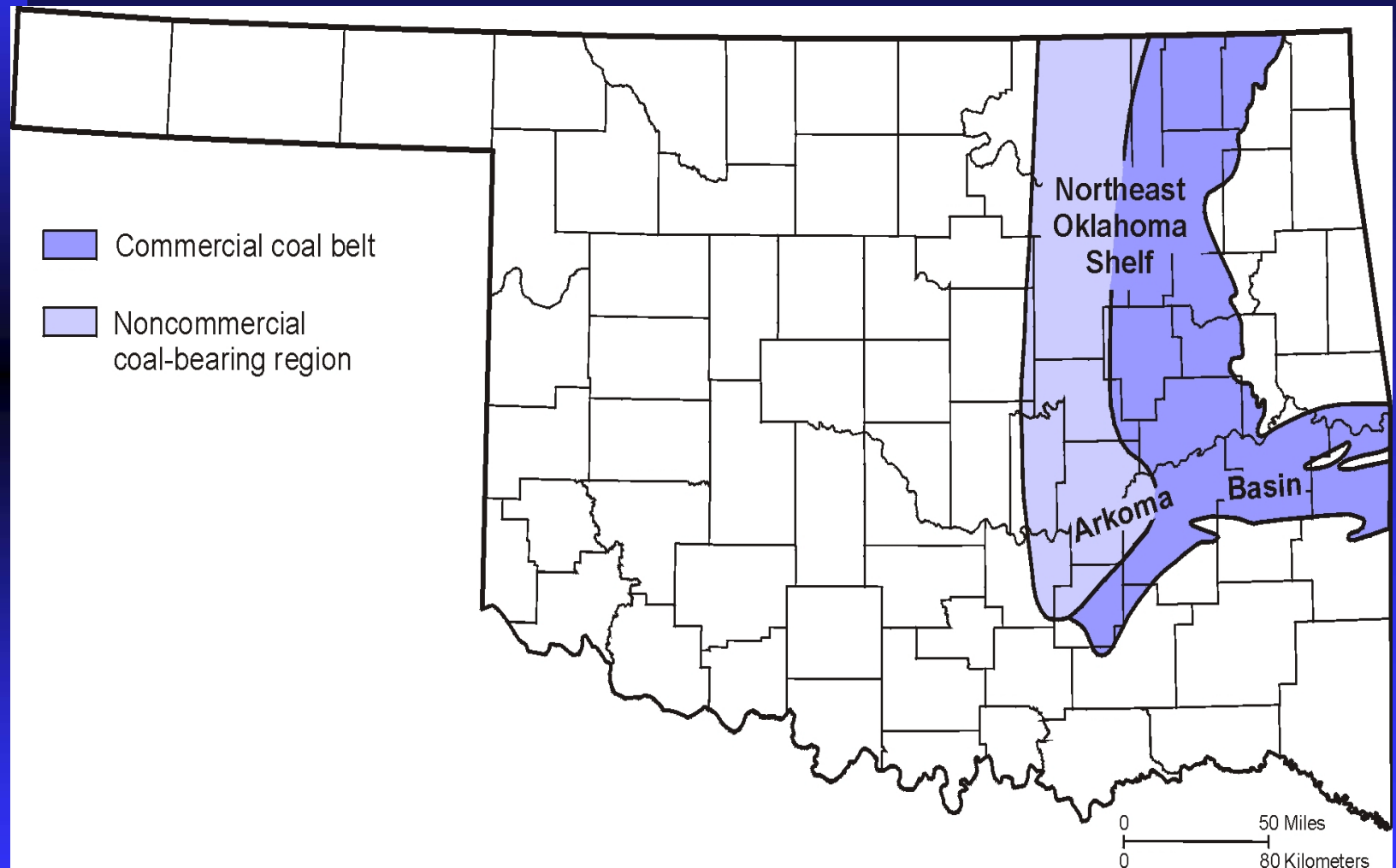
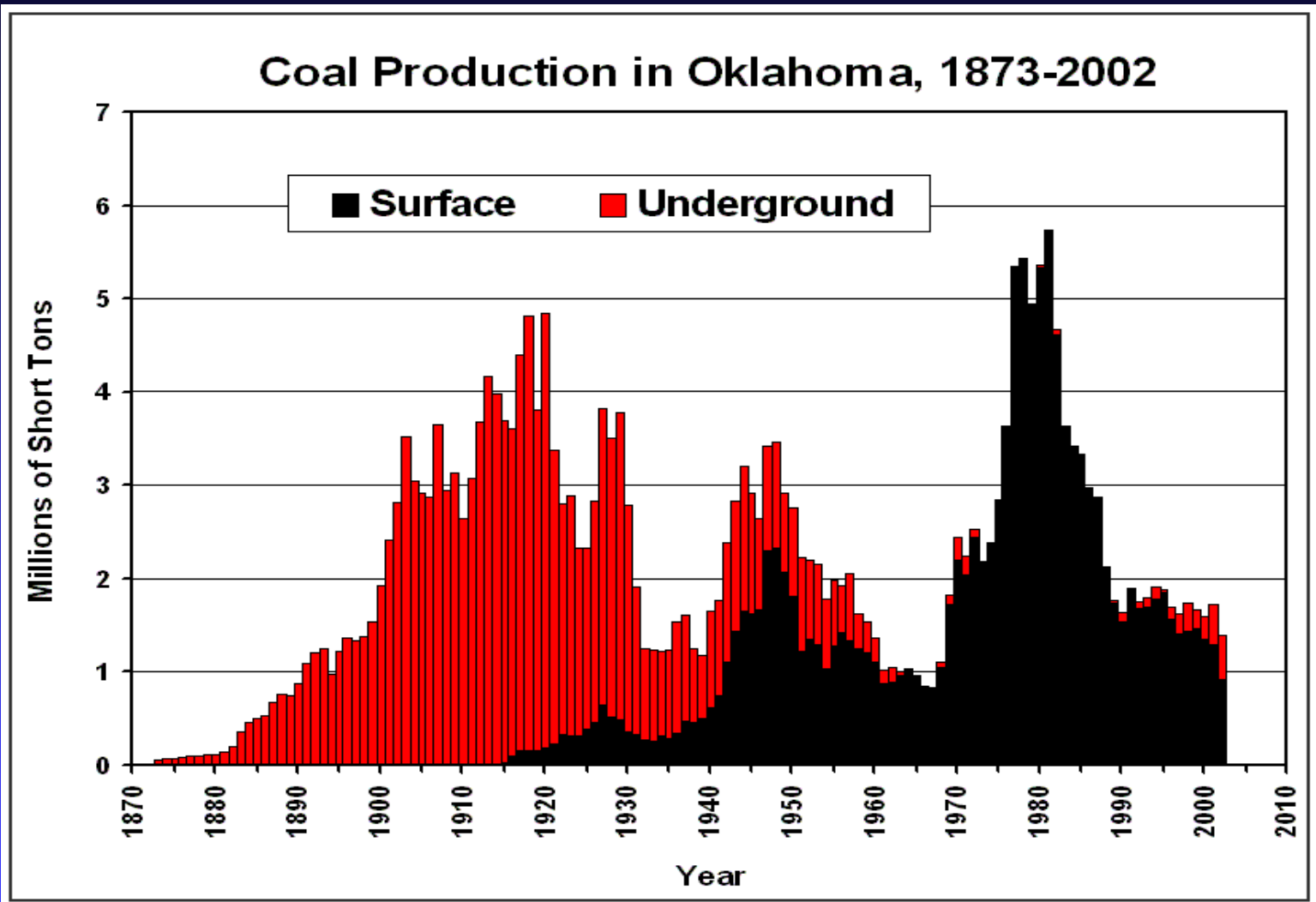


Figure 2: U.S. Lower-48 States Coalbed Methane Resources (map after Wood and Bour, 1988)

Area of Oklahoma Coal bed Activity

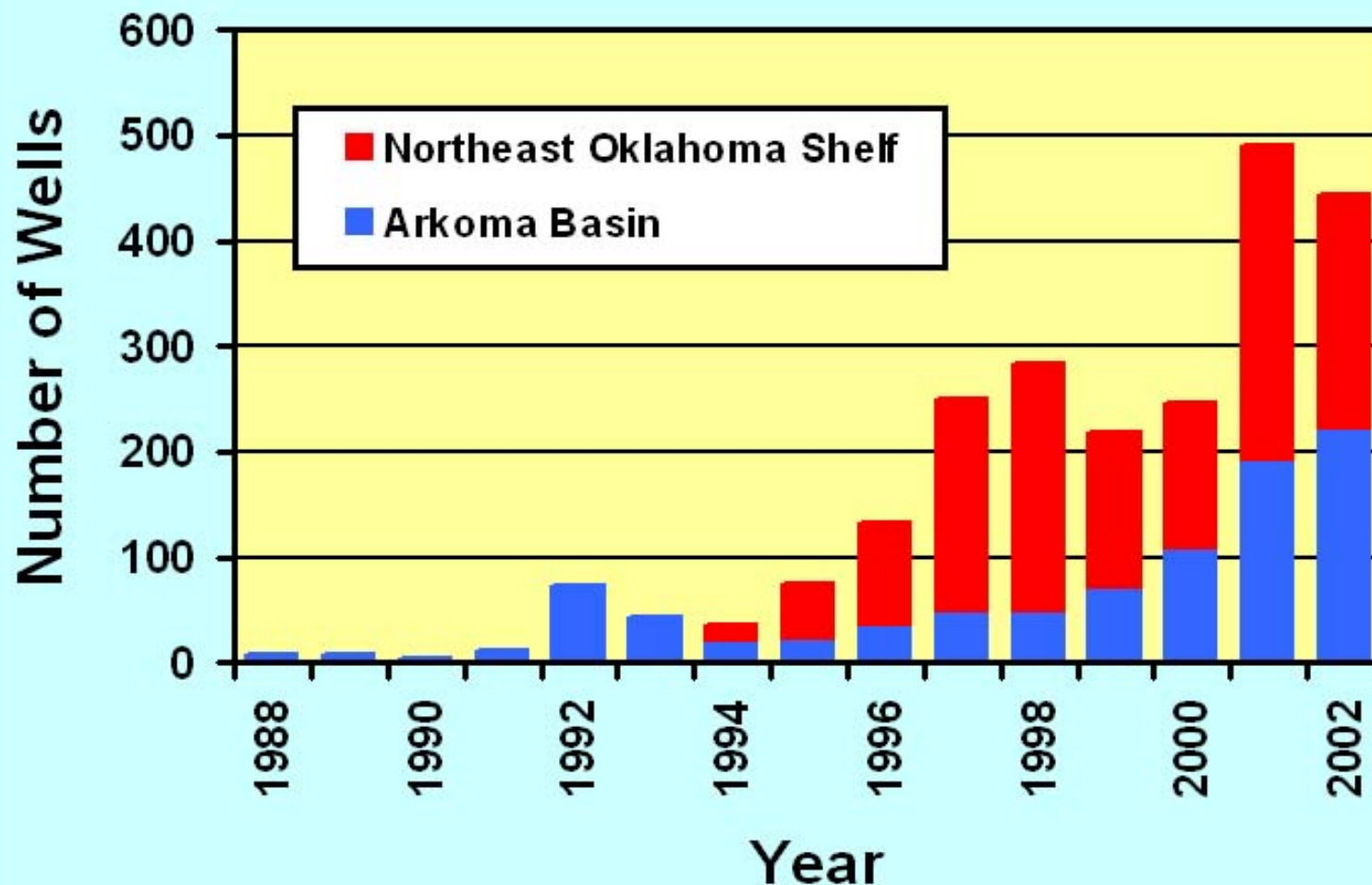
(Courtesy Oklahoma Geological Survey)





(Courtesy Oklahoma Geological Survey)

CBM Well Completions in Oklahoma



(Courtesy Oklahoma Geological Survey)

Regulation :

The Coalbed Methane activities are regulated similarly to Minimum Unallocated Gas Well. Different aspect of activities reviewed as :

Testing :

- . Form 1016 to report shut in pressure to obtain Minimum allowable
- . Form 1030 to adjust the allowable in case the WOR is over 3:1
- . Form 1022 to report the flaring or venting of the gas

Drilling:

- . Intent to Drill, From 1000, Rule 165:10-3-1
- . Surface Casing, 50 ft below treatable water level, Rule 165:10-3-4

Geology/ Engineering

Reserve Calculation will be based on gas content of the rock and not on material balance or volumetric technique.

Increase density will be reviewed based on reserve calculation or geological limitations.

Commingling application, Form 1023 required for production of more than one zone

Completion Report, Form 1002A, 1002C required for any completion or recompletion

Incentive Program

The Senate bill 535 is the only incentive program applicable to coal bed methane activity in Oklahoma

The production from Coal bed methane will be exempted from gross production. It has three different options:

Option One:

Twenty Four Month Exemption, prior to July 1994

For any incremental production which results from a horizontally drilled well producing prior to July1, 1994

Option Two:

Twenty Four Month Exemption, prior to July 1, 2002

For any horizontally drilled well producing prior to July 1, 2002 , which production commenced after July 1, 1995

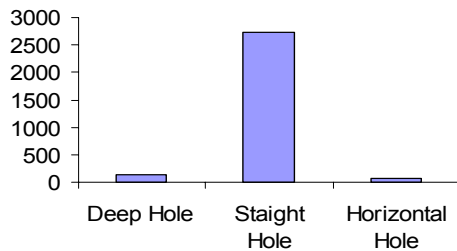
Option Three

Forty-Eight month exemption, prior to July 1, 2006

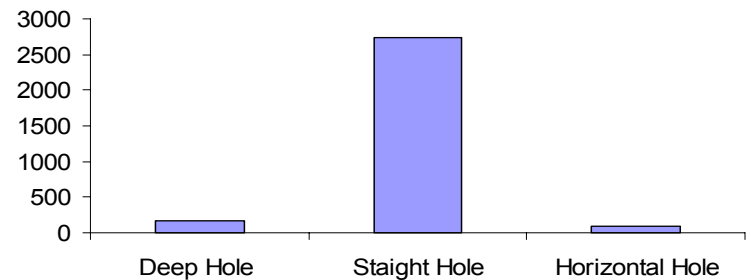
For any horizontally drilled well , which production commenced after July 1, 2002

Completion Activity Comparison in Each Year

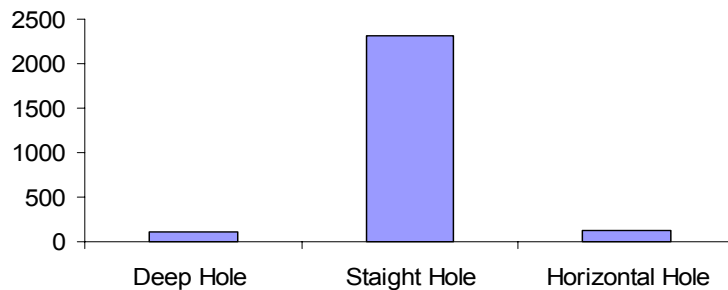
Year 2000 completion Type



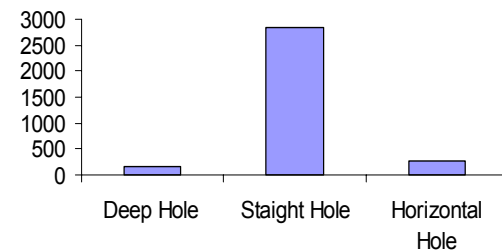
Year 2001 Completion Type



Year 2002 Completion Type



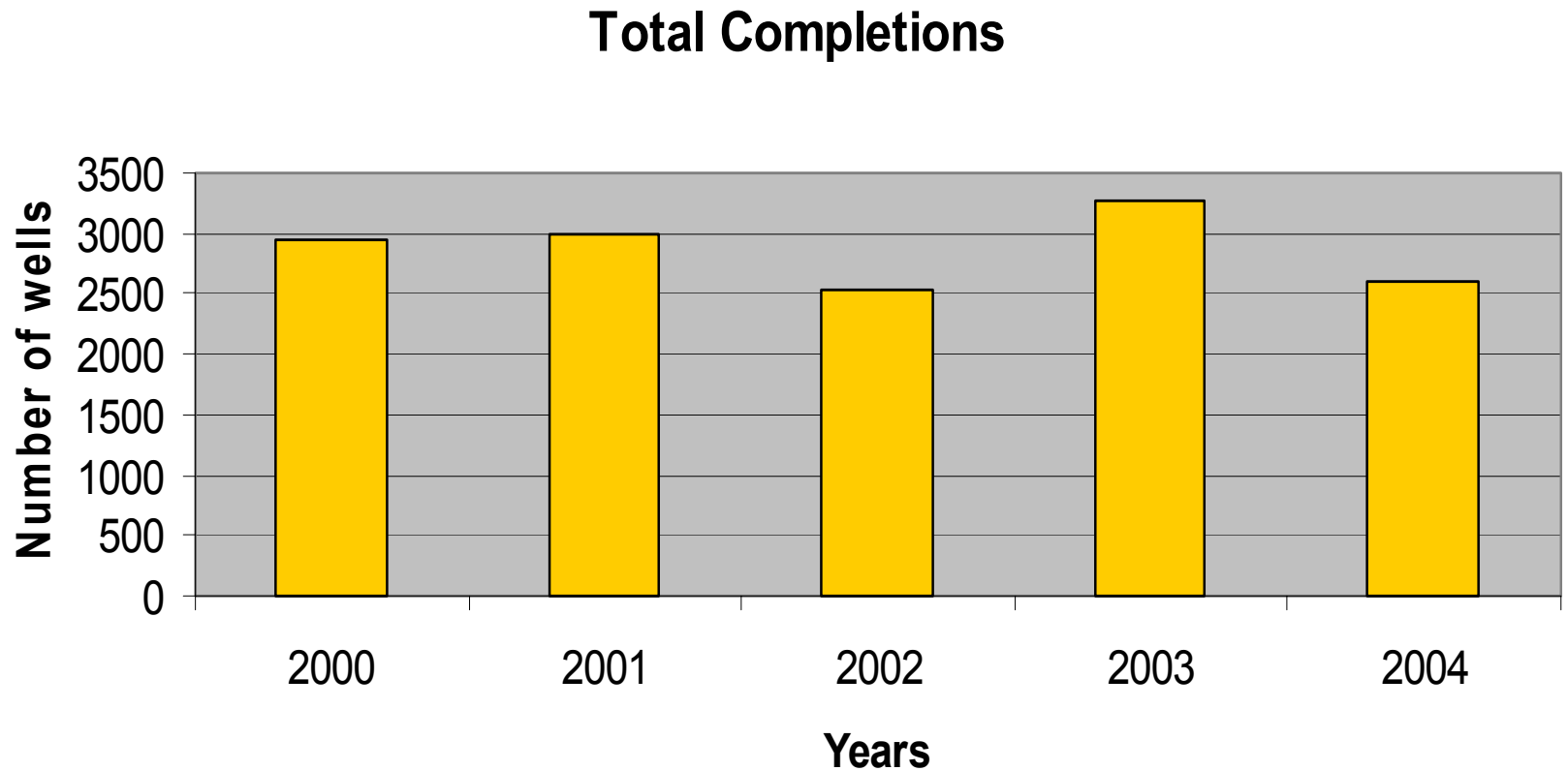
Year 2003 Completion Type



Five Years Completion Activity in Oklahoma

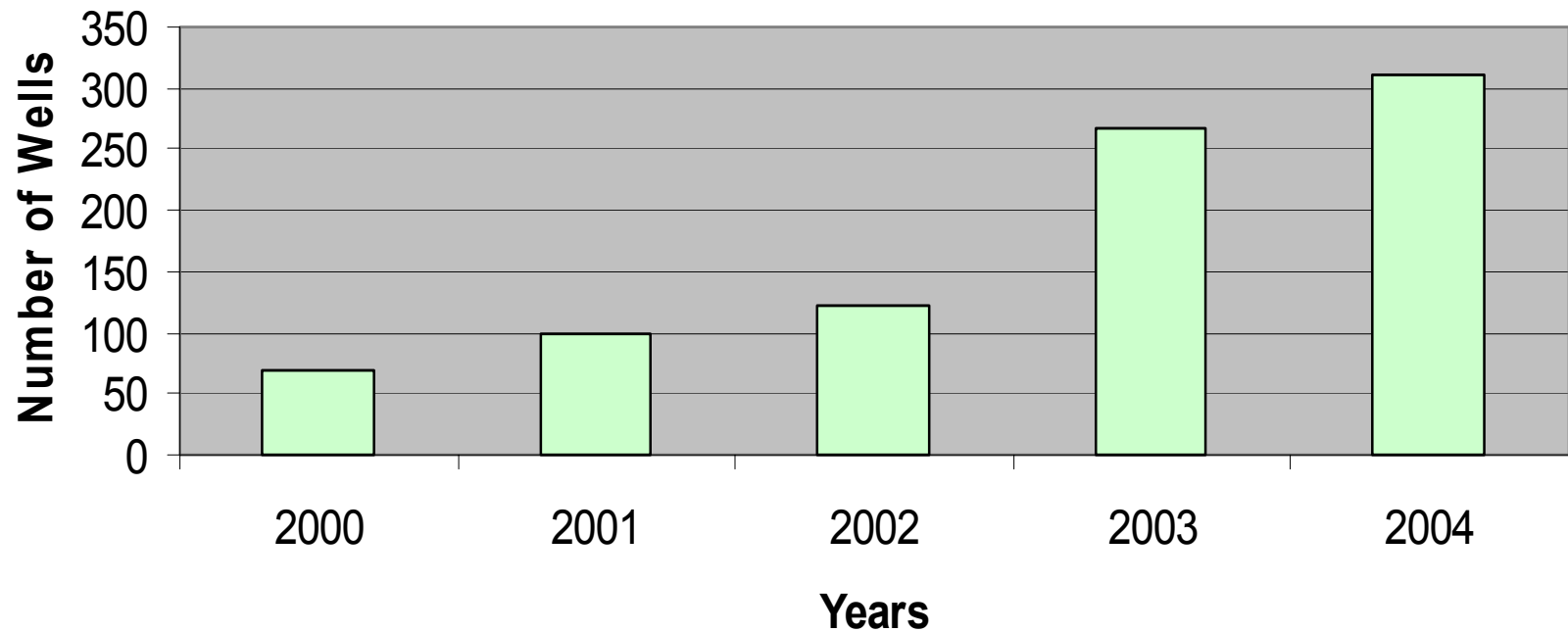
Year	Deep Well	Horizontal Hole	Straight Hole	Total
2000	126	69	2738	2936
2001	171	100	2729	3000
2002	104	123	2137	2534
2003	163	268	2845	3276
2004	160	311	2137	2608

Five Years Completion Activity In Oklahoma



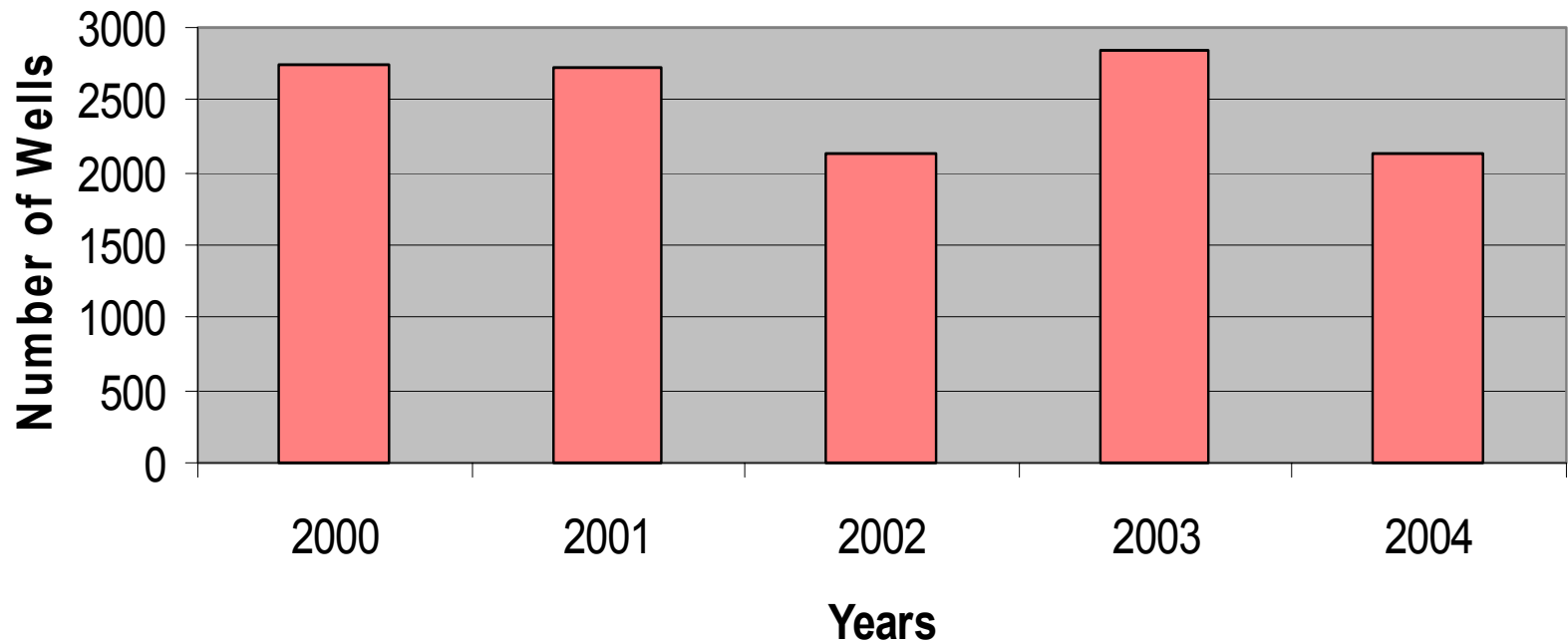
Five Years Horizontal Completion In Oklahoma

Horizontal Hole Completion



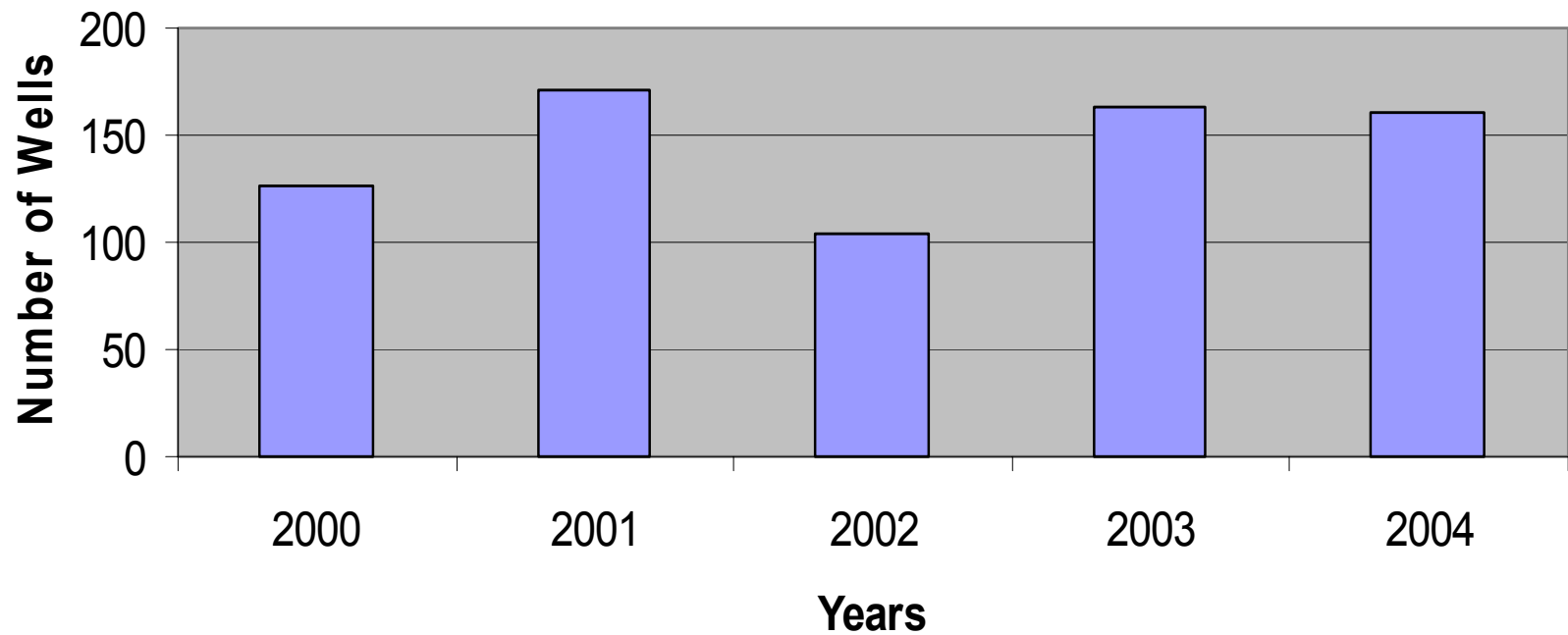
Five Years Vertical Completion in Oklahoma

Straight Hole Completion

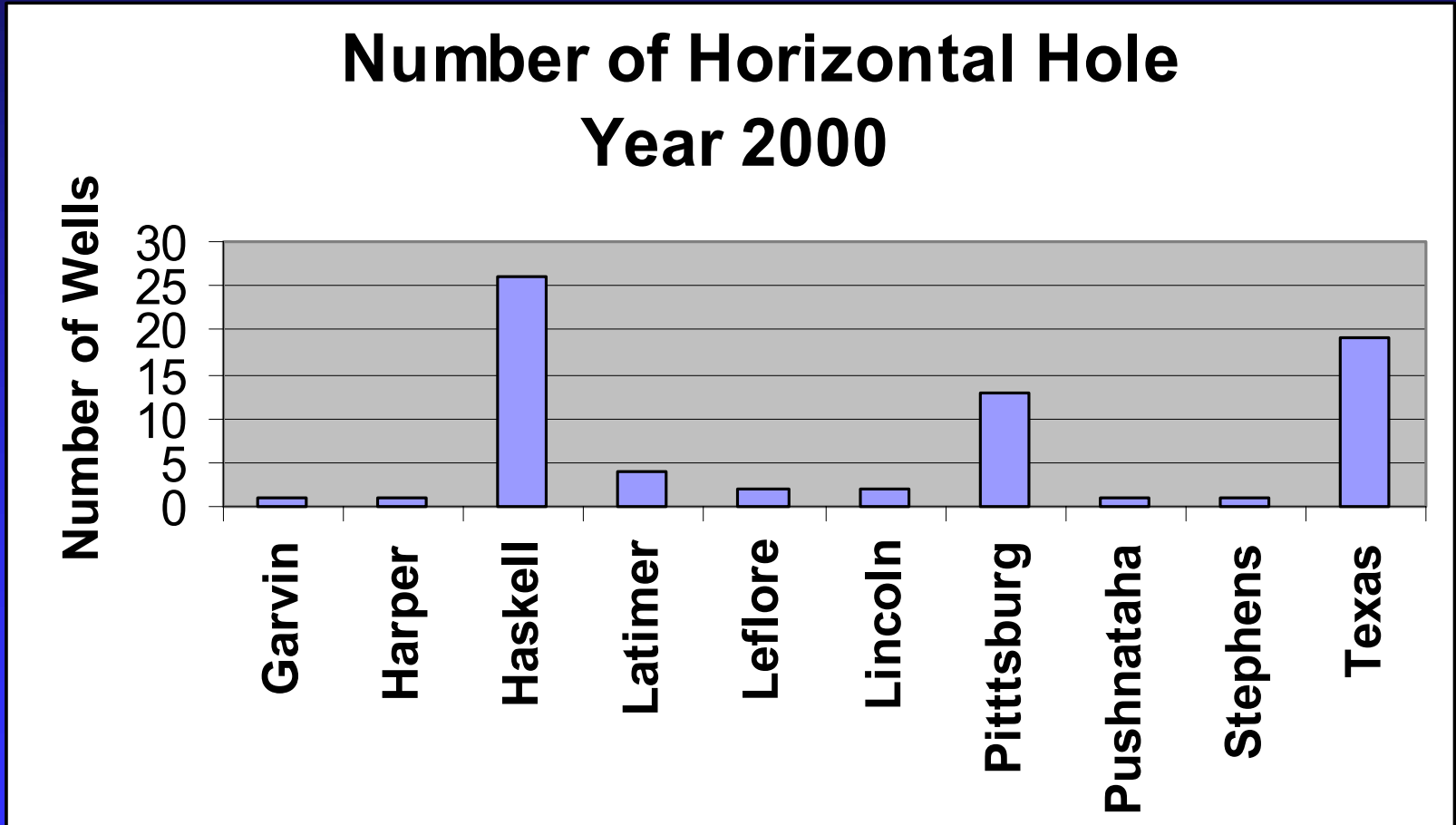


Five Years Deep Well Activity in Oklahoma

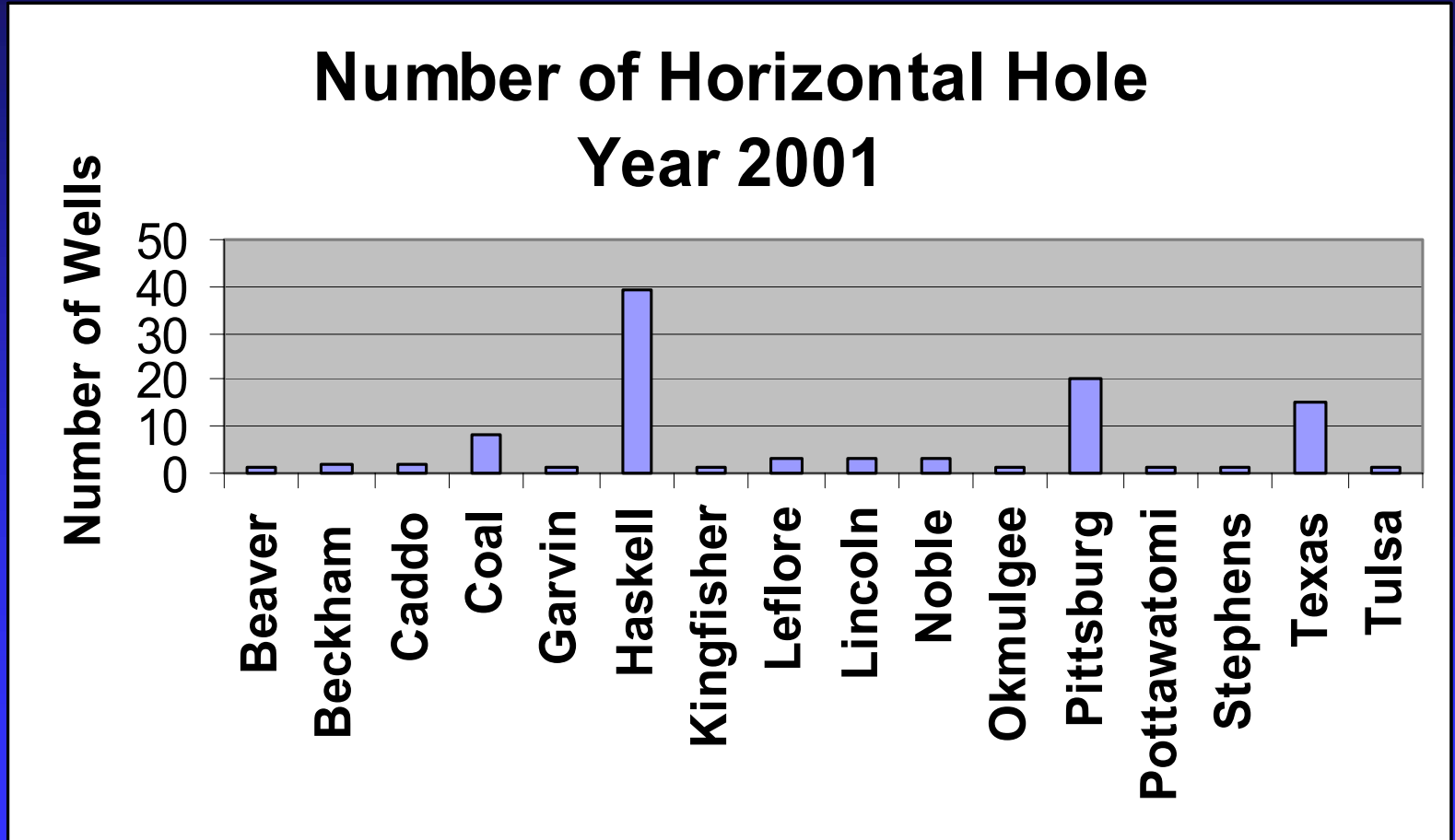
Deep Well Completion



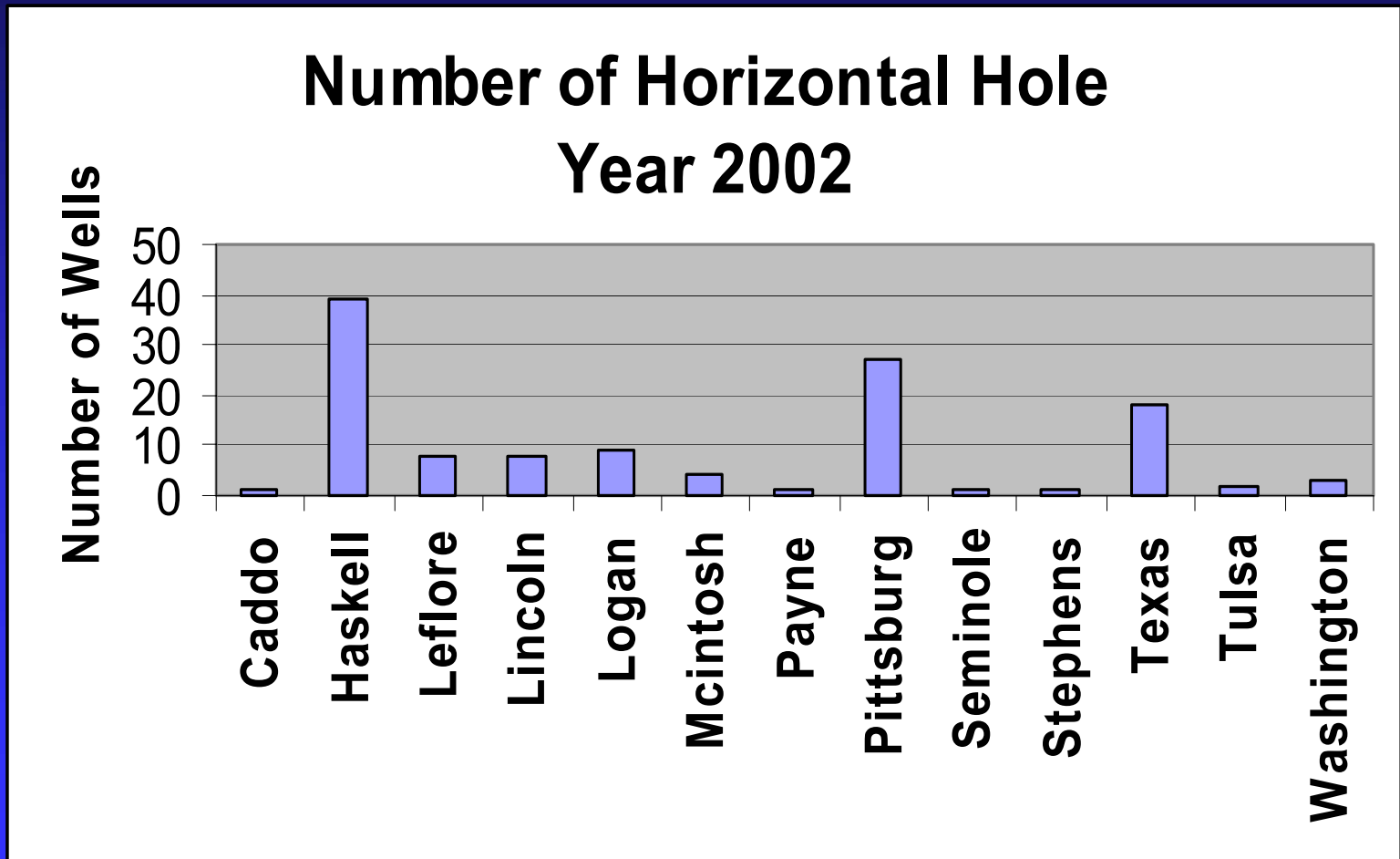
Horizontal Completion in Counties



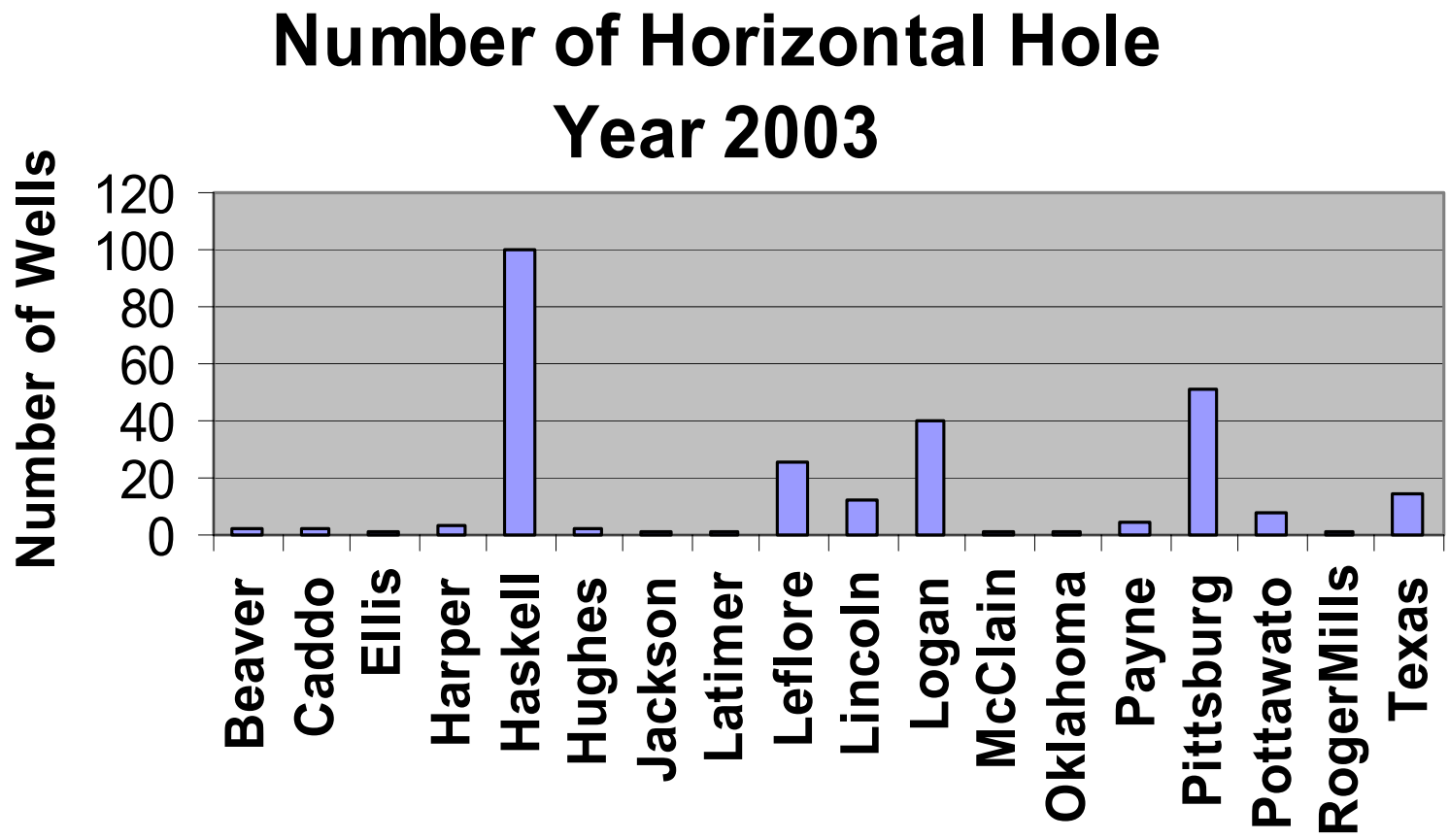
Horizontal Completion in Counties



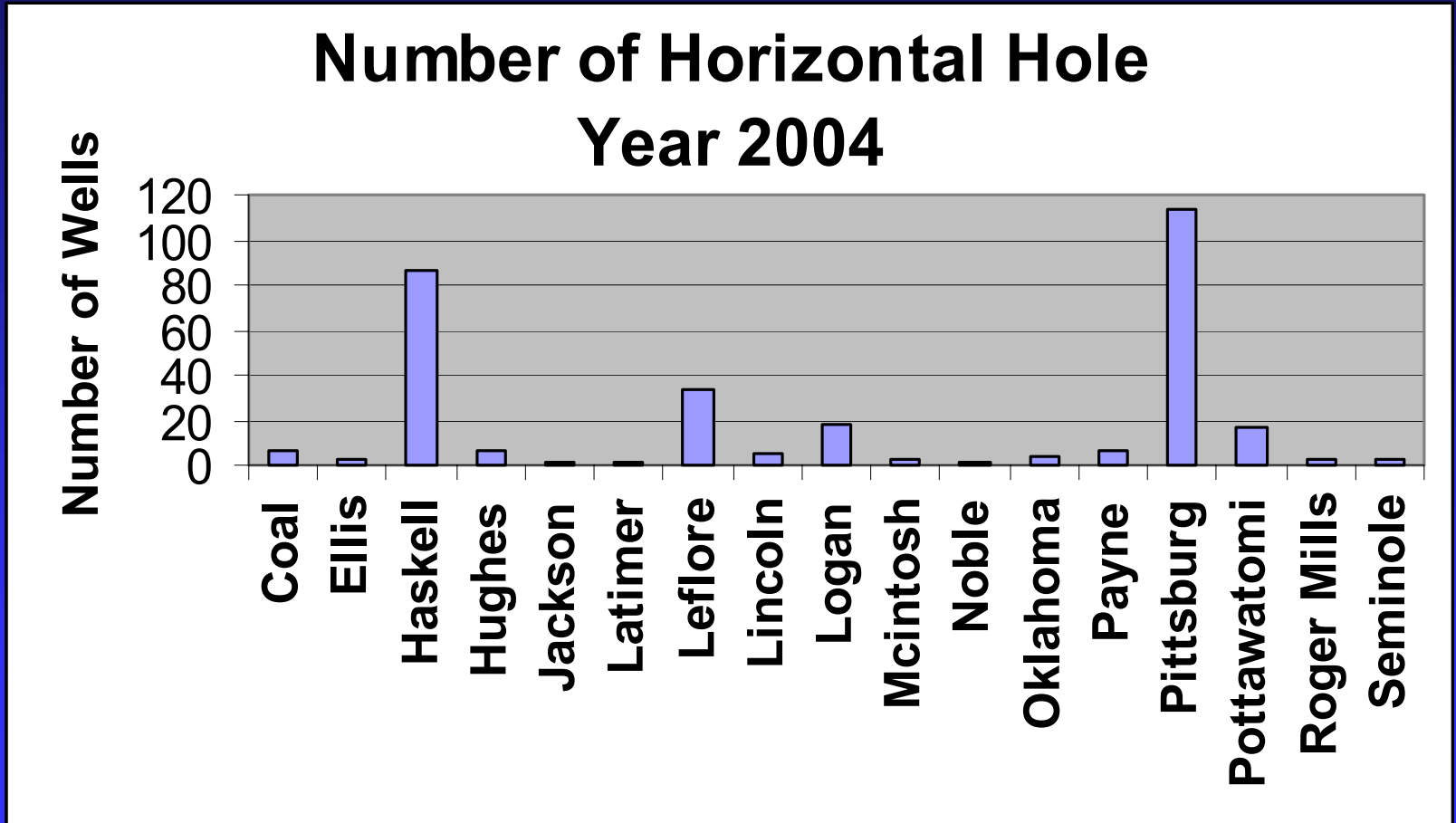
Horizontal Completion in Counties



Horizontal Completion in Counties



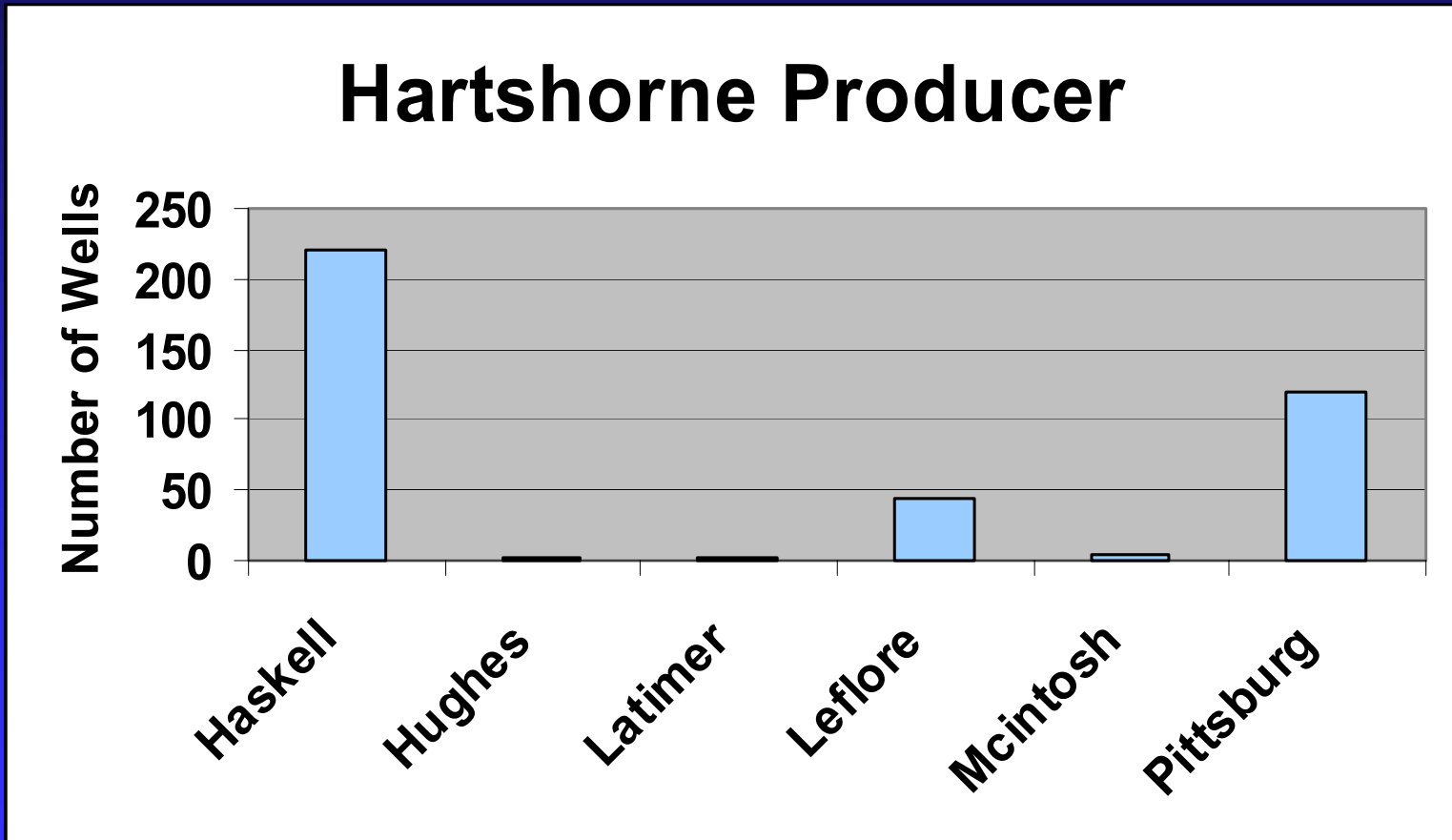
Horizontal Completion in Counties



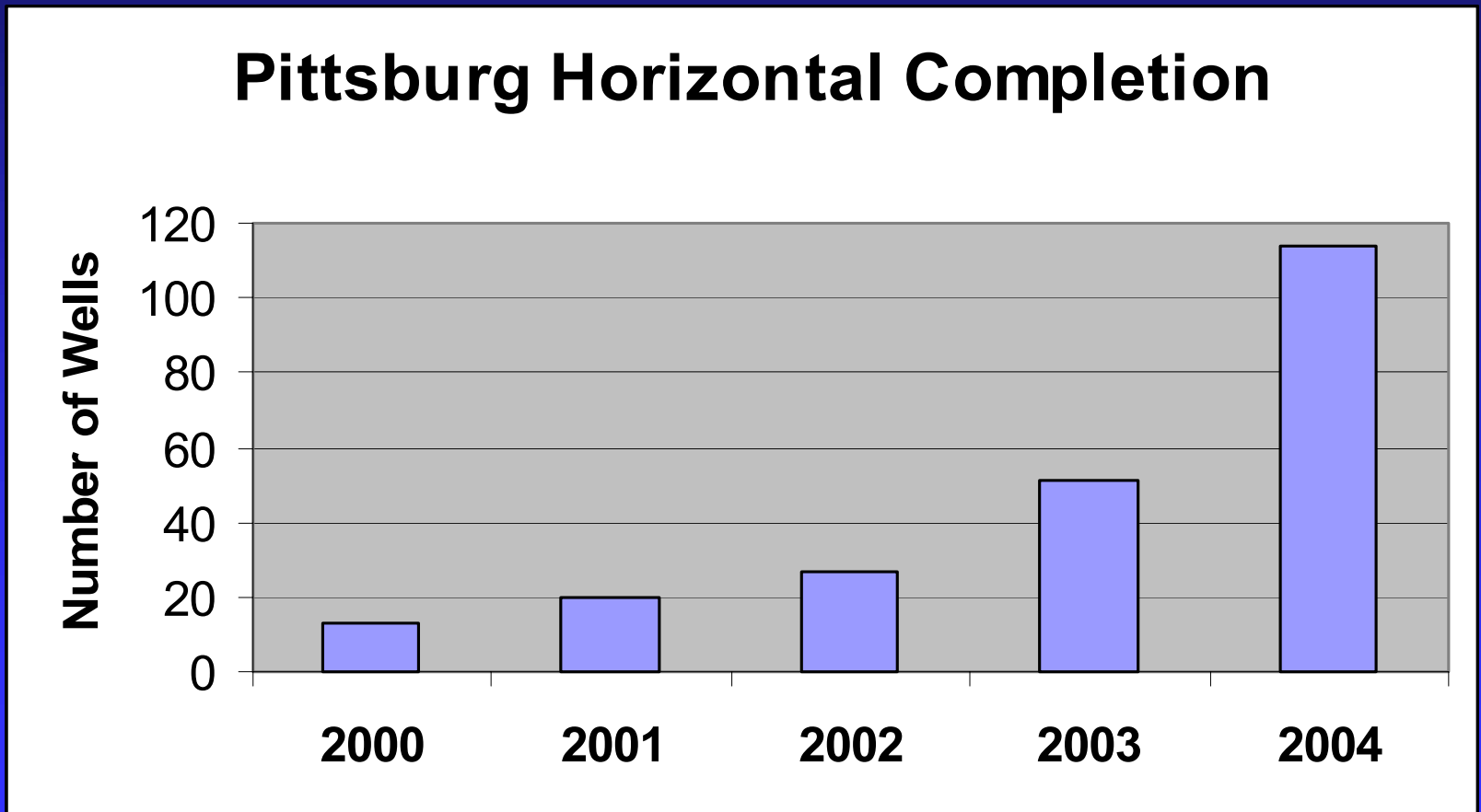
Location of Hartshorne Producer in Oklahoma



Hartshorne Gas Production in Oklahoma

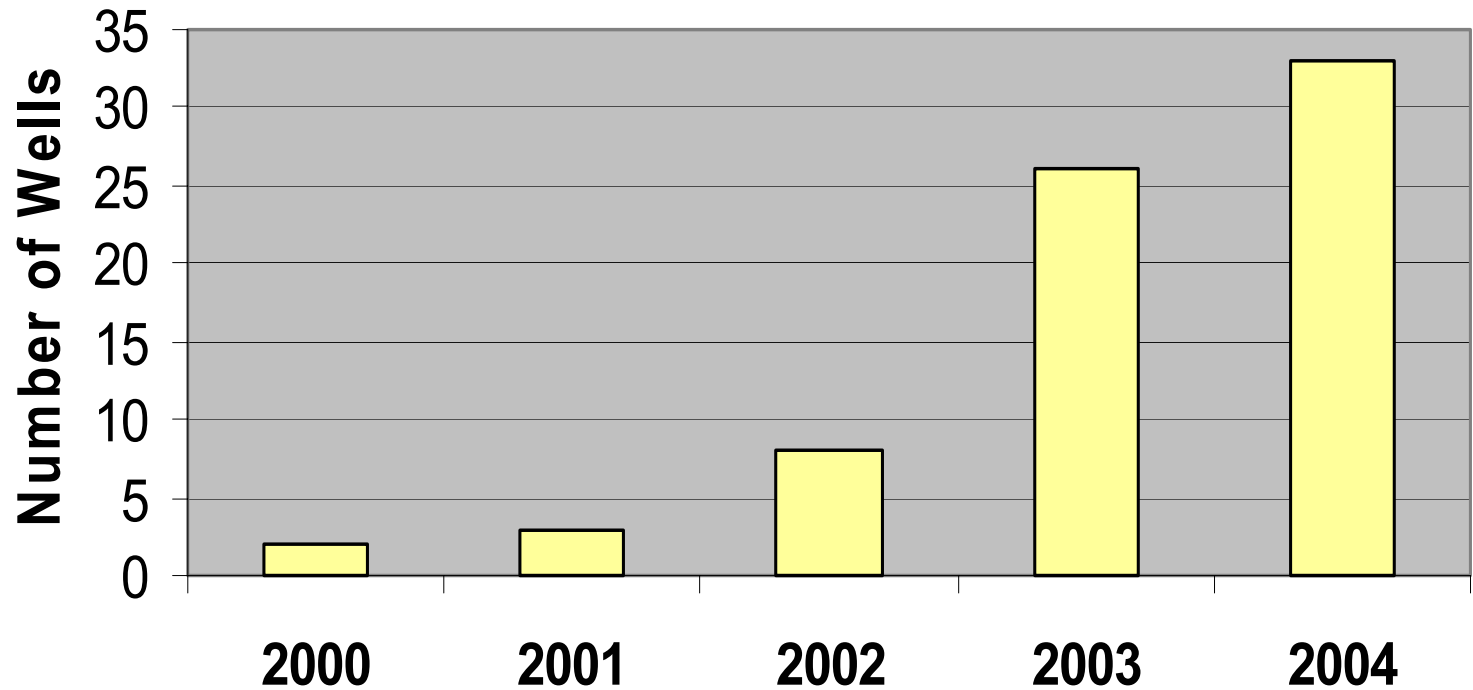


Pittsburg Horizontal Completion

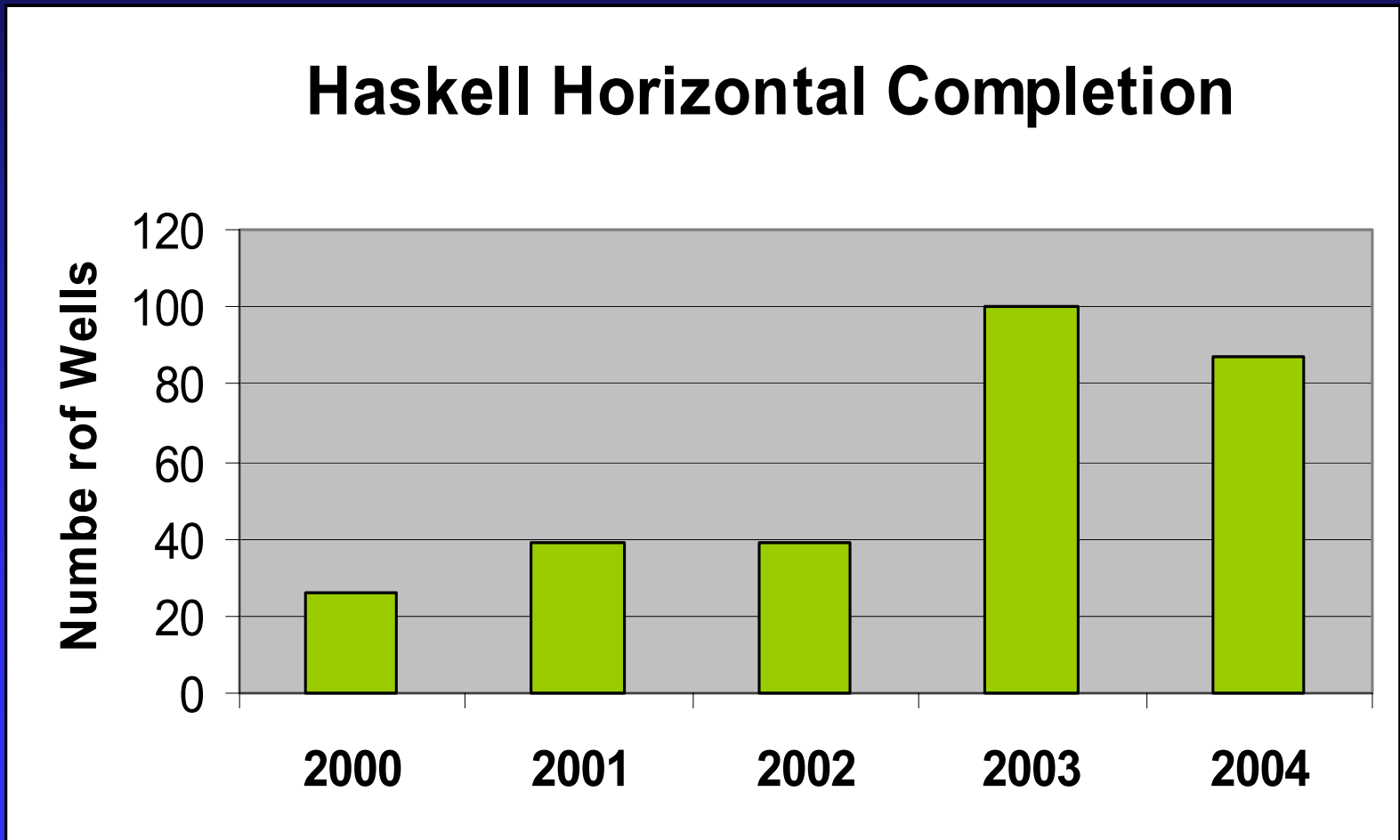


Leflore Horizontal Completion

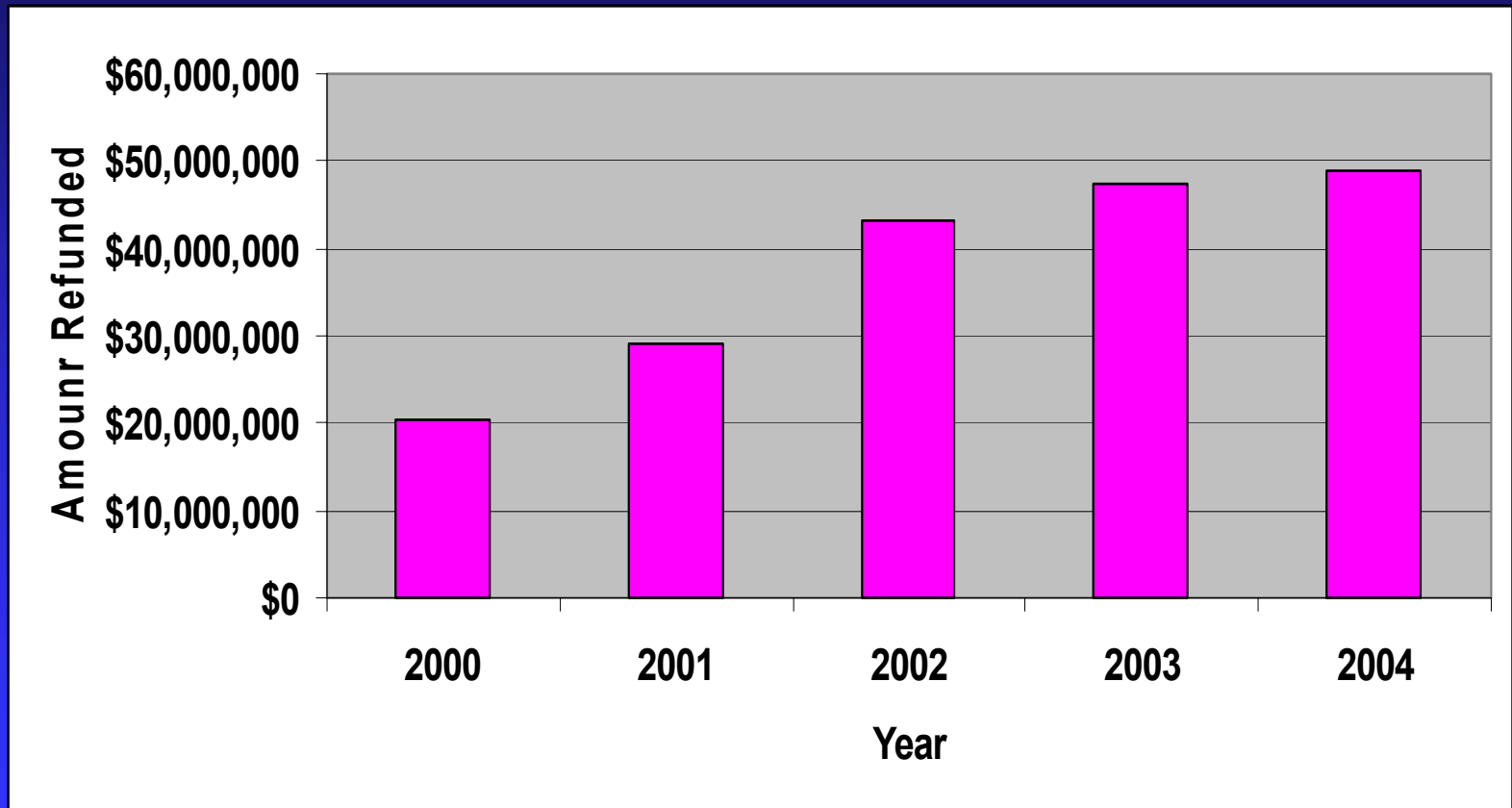
Leflore Horizontal Completion



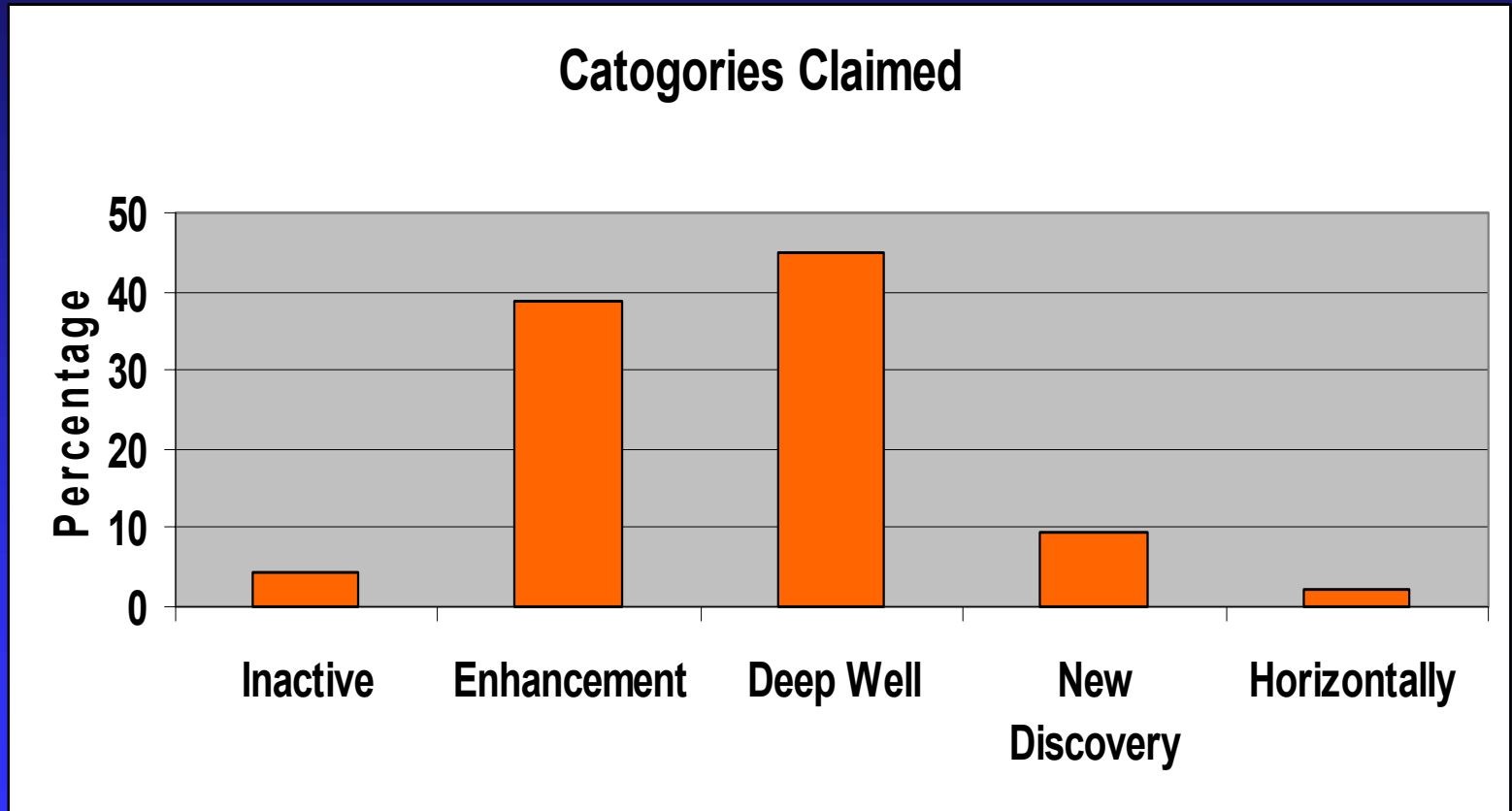
Haskell Horizontal Completion



Total Amount Claimed

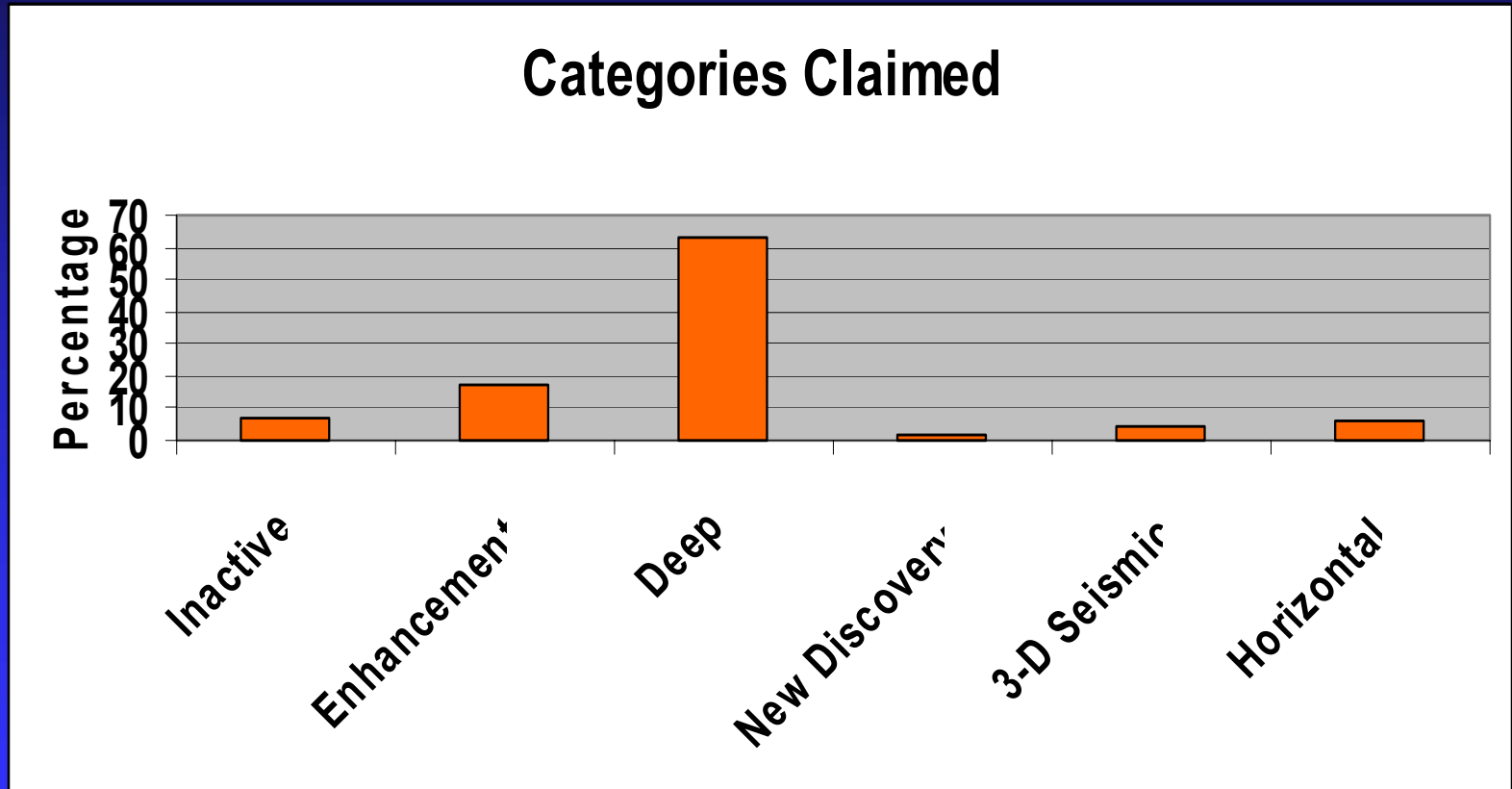


Category of wells claimed in Year 2000

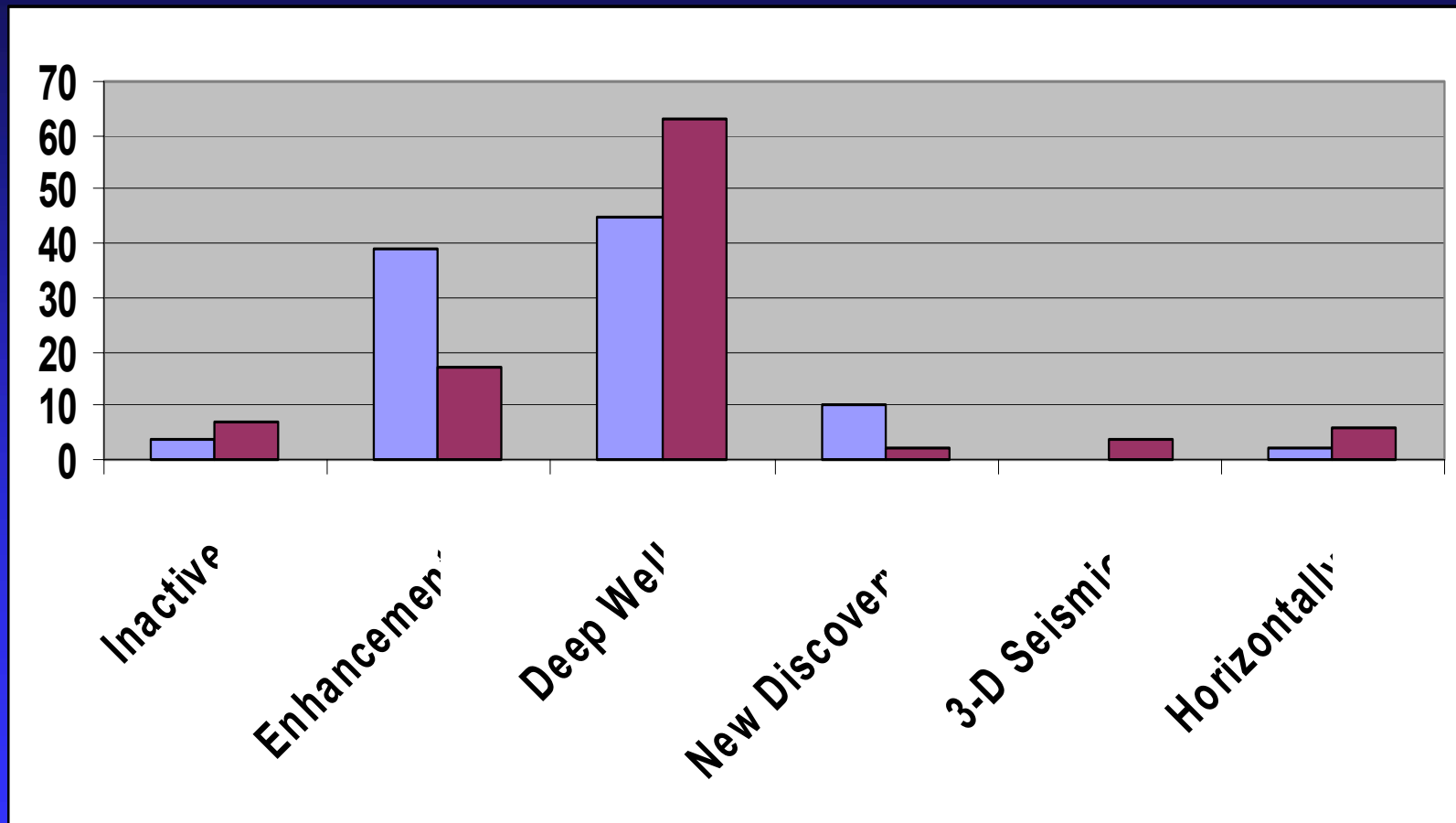


No 3D -Seismic claim for year 2000

Category of wells claimed in Year 2004



Comparison Between Categories claimed in 2000 and 2004



Question/Answers: