



# Haynesville Shale Overview

John Kapchinske, VP Geosciences – Southern Division

John Sharp, Geoscience Manager – Louisiana





# Haynesville Shale – Overview



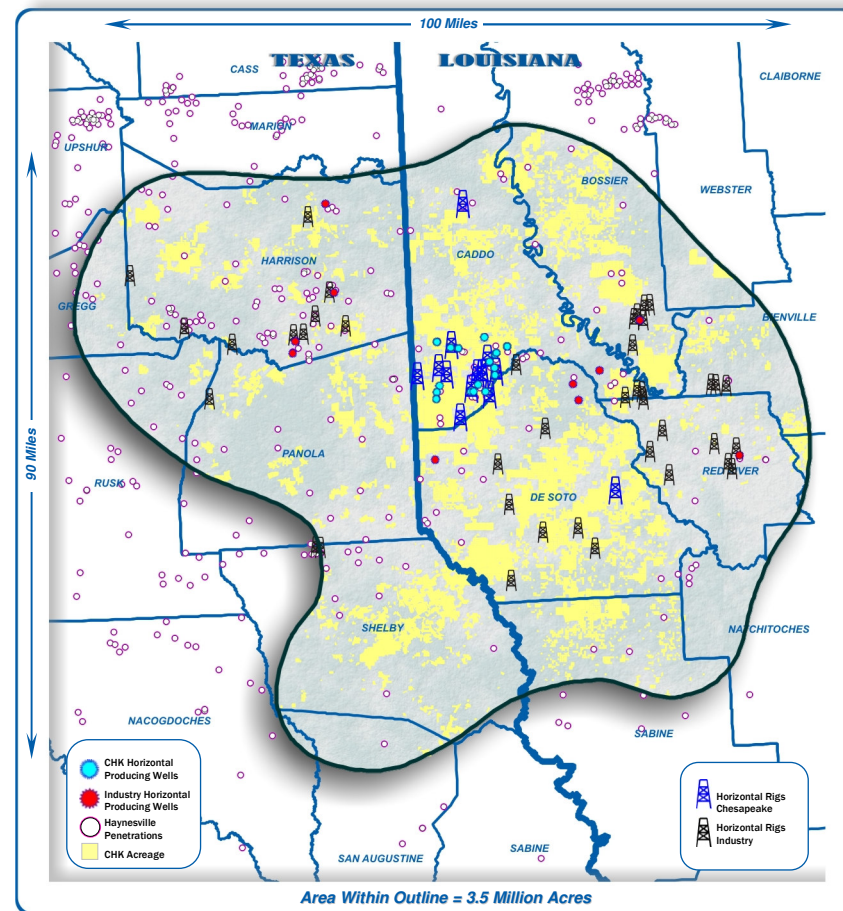
- CHK's largest discovery; could become the largest U.S. natural gas field and one of the top-five gas fields in the world
- Play encompasses a ~3.5 million acre area in northwest Louisiana and east Texas
- CHK is the largest leasehold owner in the core area of the play, ~700,000 gross acres, ~480,000 net acres (after PXP 20 %), or ~20% of the play
- CHK currently operating 14 rigs
- Current net production of ~50 mmcfe/day (~65 mmcfe gross)
  - Anticipate reaching ~80 mmcfe/day net by YE'08, ~325 mmcfe/day by YE'09 and ~615 mmcfe/day by YE'10
- Based on drilling results by CHK, others in the play, and our experience with other shale plays, we believe that an EUR range of 4.5–8.5 bcfe per well for the Core Area is reasonable with mid-point of 6.5 bcfe
- ~3,000 potential net risked wells in inventory to develop 14 tcfe of risked unproved reserves
- Currently have 130 bcfe of PUD reserves



# Haynesville Shale – Historical Review



- **CHK has been evaluating the play for >2 years**
  - >450 wells have penetrated the formation
- **CHK had a block of acreage in southern Caddo & Bossier Parishes**
  - Several key wells indicated a potential resource play, including a well drilled and cored in Sligo Field in 2005
- **CHK drilled 5 vertical Haynesville pilot wells from January through September of 2007 and cored 4 wells**
- **CRTC Lab results combined with petrophysical study of >100 wells**
- **Resulting in definition of core area**
- **Leading to focused leasing of ~700,000 gross acres**
- **Excellent results to date with anticipated future improvements in both drilling and completion efficiencies**





# Haynesville Shale – Characteristics



● Depth TVD	10,000' – 13,000'
● MD (Horizontals)	14,000' – 17,000'
● Thickness (Net)	200' – 300'
● Total Organic Content (TOC)	~ 4%
● Thermal Maturity (Vitrinite Reflectance)	2.2% – 3.0%
● Average Log Porosity	10%
● Pressure (psi/foot)	~0.9
● Water saturation	15% – 20%
● Gas-in-place/section (bcfe/section)	150 – 225
● Anticipated Recovery Factor	25% – 30%
● Average EUR/Horizontal Well (bcfe)	4.5 – 8.5



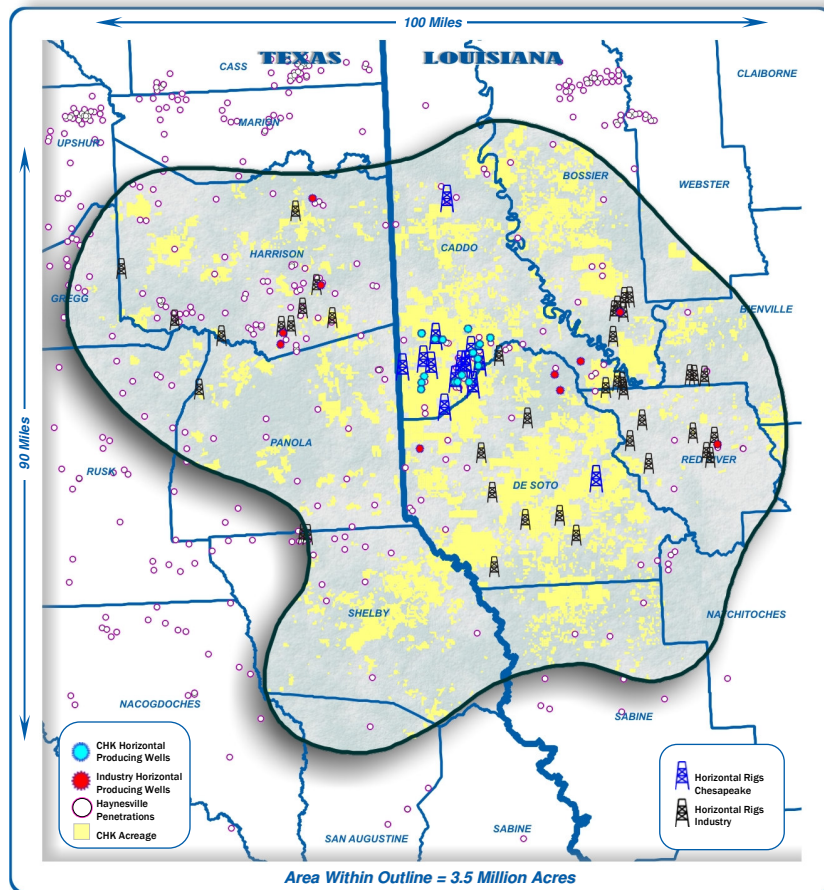
# Haynesville Shale – Advantages



- **Advantages inherent to the Haynesville Shale Play**
  - Overpressured reservoir
  - High gas-in-place and high initial recoveries
  - Geologically stable area - structurally uncomplicated
  - Good frac barrier below and no apparent water problems
  - Located near major pipelines and infrastructure
  - Adequate water supply for drilling and completion purposes
  - Located largely in rural areas
- **CHK Advantages**
  - First mover geological and land advantages
  - Largest leasehold position in the core area of the play
  - Experience in other shale plays
  - CRTC (Chesapeake Reservoir Technology Center)
  - Ability to obtain rigs to convert leasehold to HBP quickly
  - Experience in urban environments will help in the Shreveport area
  - 80/20 JV with PXP gives CHK <\$1/mcfe FC in 2008-2011



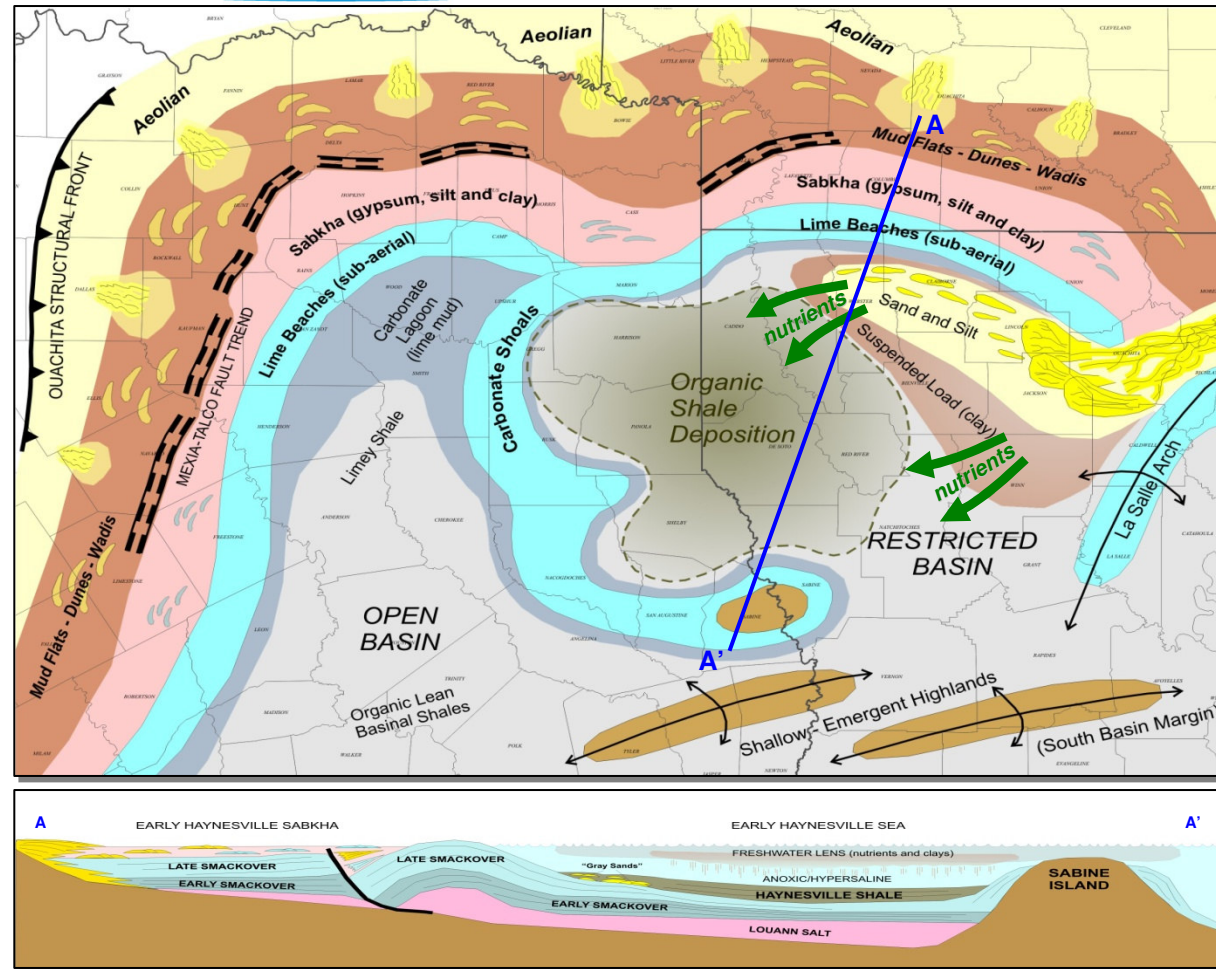
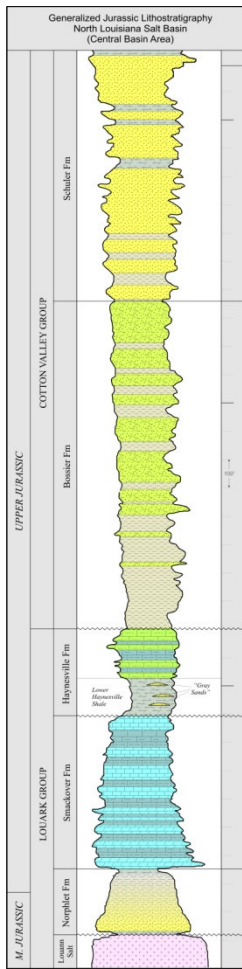
# Haynesville Shale – Leasehold Position



- CHK currently owns or has commitments for 480,000 net acres of leasehold (after 20% sale to PXP)
- CHK now has 16 horizontal Haynesville Shale wells and 1 vertical well producing ~50 mmcfe/day net ~65 mmcfe/day gross)
- Others in the industry now have an estimated 11 horizontal and 81 vertical wells producing across an area spanning ~100 miles by ~90 miles
- CHK is currently utilizing 14 operated rigs of 53 horizontal rigs in the industry
- Other active operators include Petrohawk, Encana, Questar, Penn Virginia, and Shell



# Haynesville Shale – Geology



# Haynesville Shale – Cross-Section A - A'



Riddle Oil Company  
Henry Pitts 1

Berkshire Oper LLC  
Parker 1

Obenco Inc.  
Harris Doyle GU 6

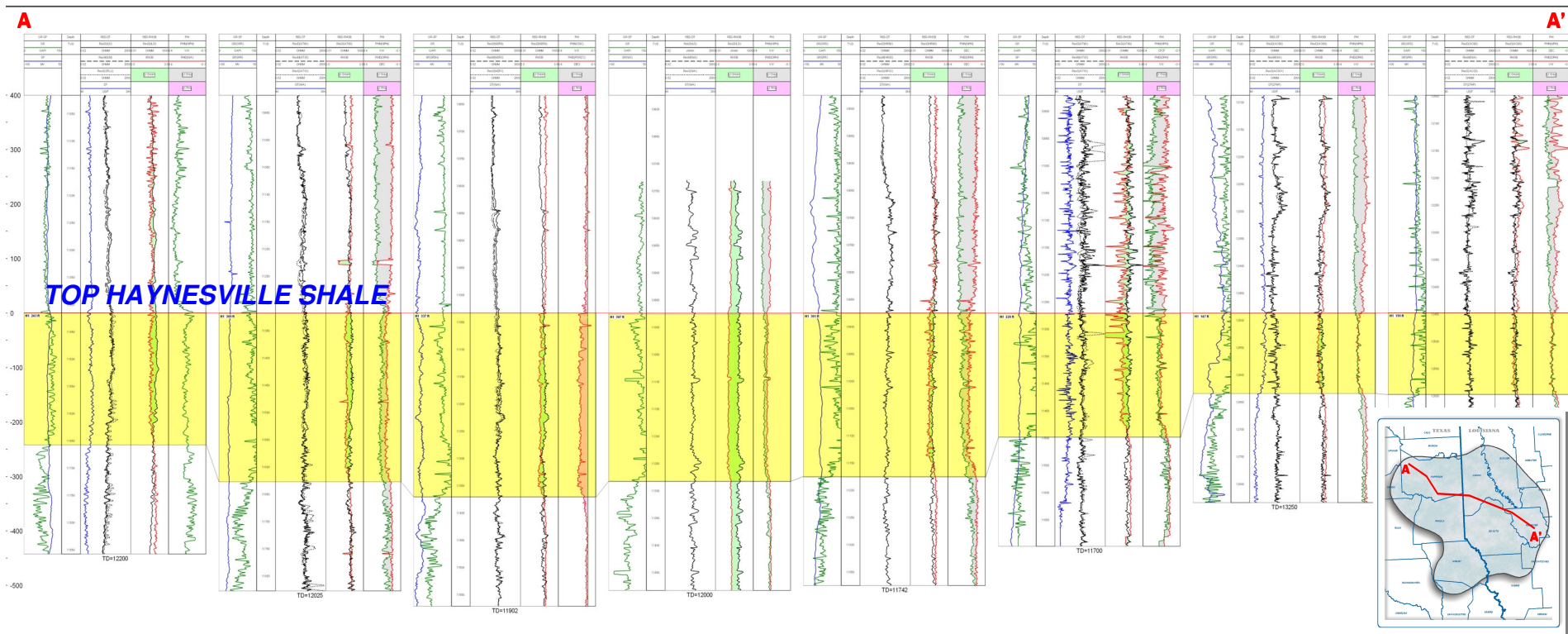
Penn Virginia  
Fogle Gas Unit 5H

Samson Lone Star LF  
Anderson Roland GU :

CHK  
SRLT 29 1

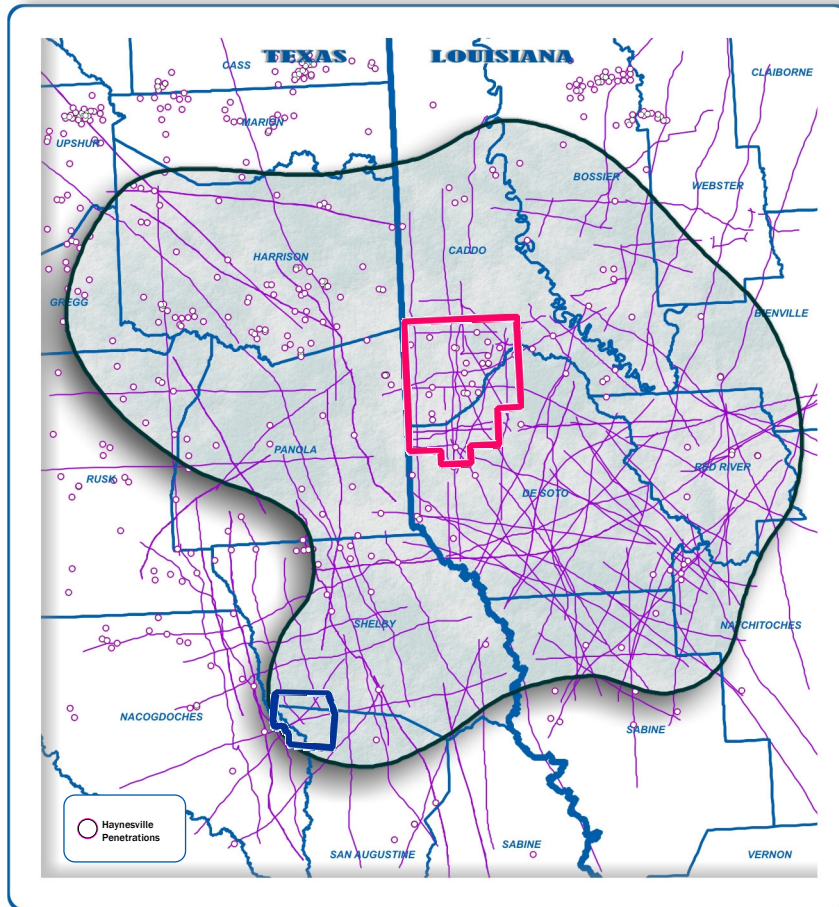
EnCana  
Martin Timber CO LL 1

EnCana  
Adcock J W Investment 1





# Haynesville Shale – Geophysics



- **Current seismic data**

- 3,700 miles of licensed 2-D seismic data
- 53 square miles of licensed 3-D seismic data
- All data reprocessed and integrated

- **Planned Seismic Data**

- Acquiring proprietary 260 square miles 3-D seismic survey
- Negotiating spec 3-D seismic data programs up to 1,000 square miles

 **Acquiring**

 **Licensed**

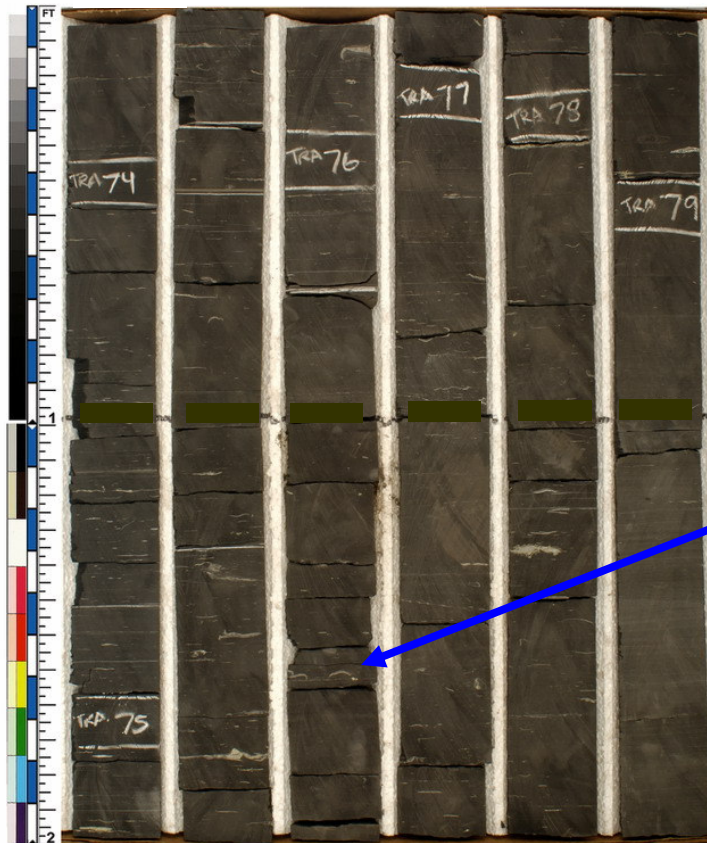
# Haynesville Shale – Petrophysics



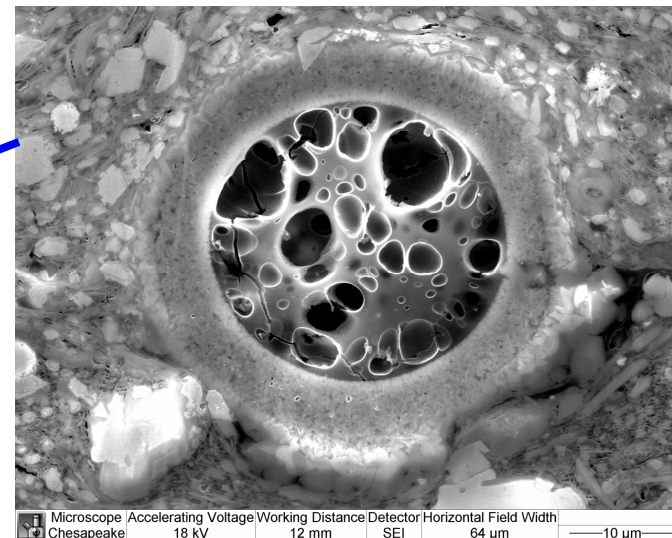
- **Petrophysical model development relies on accurate core analysis**
- **Creation of the CRTIC has resulted in key practical and creative benefits**
  - Quick turn around
  - Cost effective
  - Proprietary techniques
  - Near real-time incorporation of results and findings help refine processes in lab, modeling, mapping and operations
- **Team work between CRTIC, Geology, Petrophysical and Operational groups results in efficient application and development**



# Haynesville Shale – Petrophysics



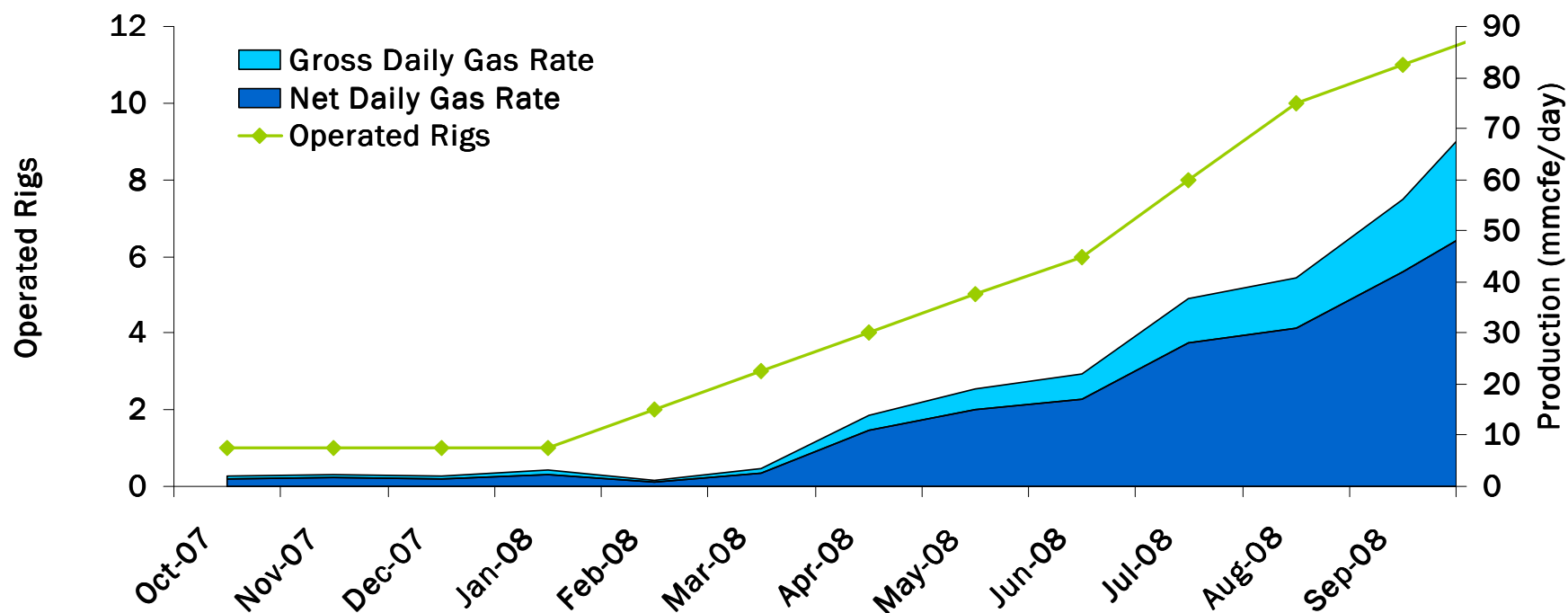
Typical Haynesville Shale core and CRTC generated SEM photo of pore space



Microscope	Accelerating Voltage	Working Distance	Detector	Horizontal Field Width
Chesapeake	18 kV	12 mm	SEI	64 μm

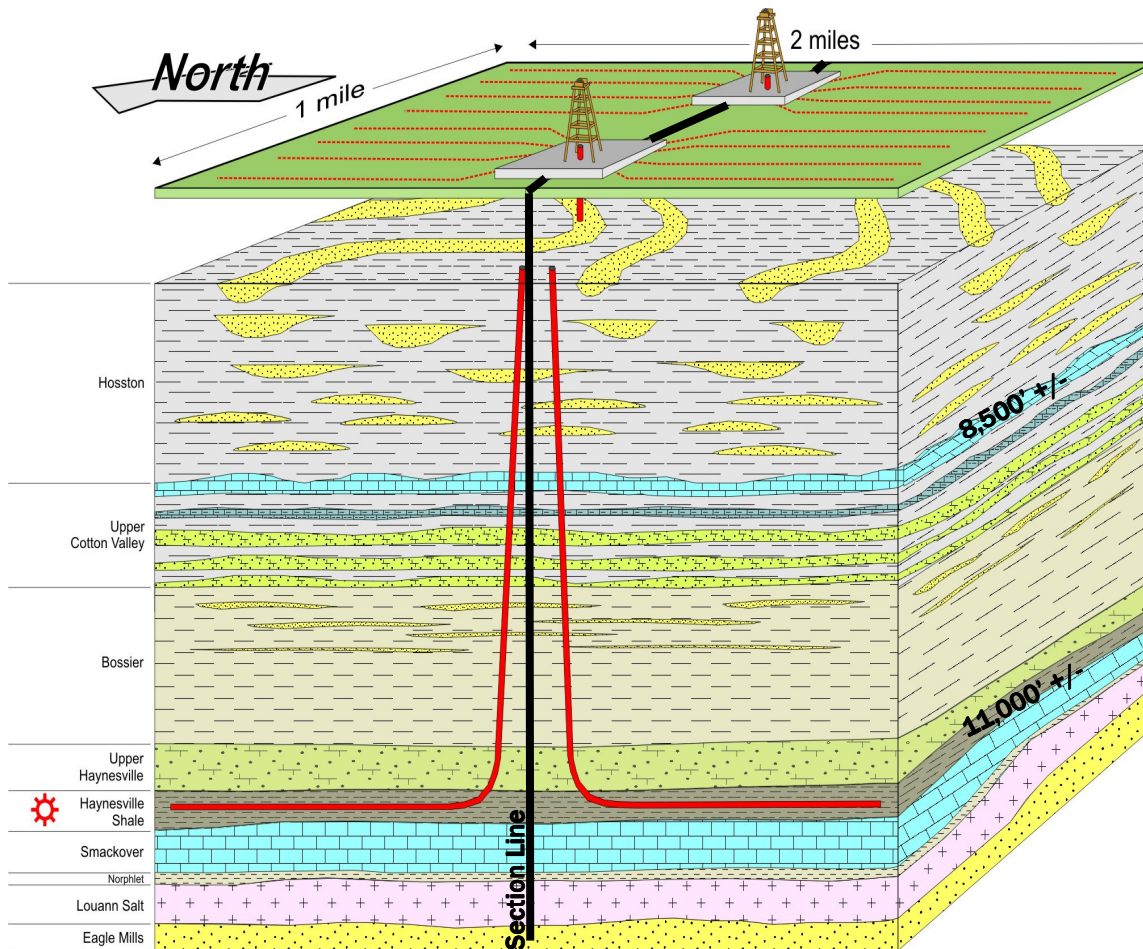
10 μm

# Haynesville Shale – Production and Rig Count





# Haynesville Shale – Emphasis on Superpads



## ● Superpads

- Shared surface imprint
- Fewer rig moves
- 8 wells per superpad
- 1 superpad per section

## ● Wells

- 80-acre spacing (8 per section)
  - 660' nominal spacing
- Single 4,500' lateral
- Oriented north-south

## ● Gathering systems east-west along section lines between superpads

# Haynesville Shale – Superpads



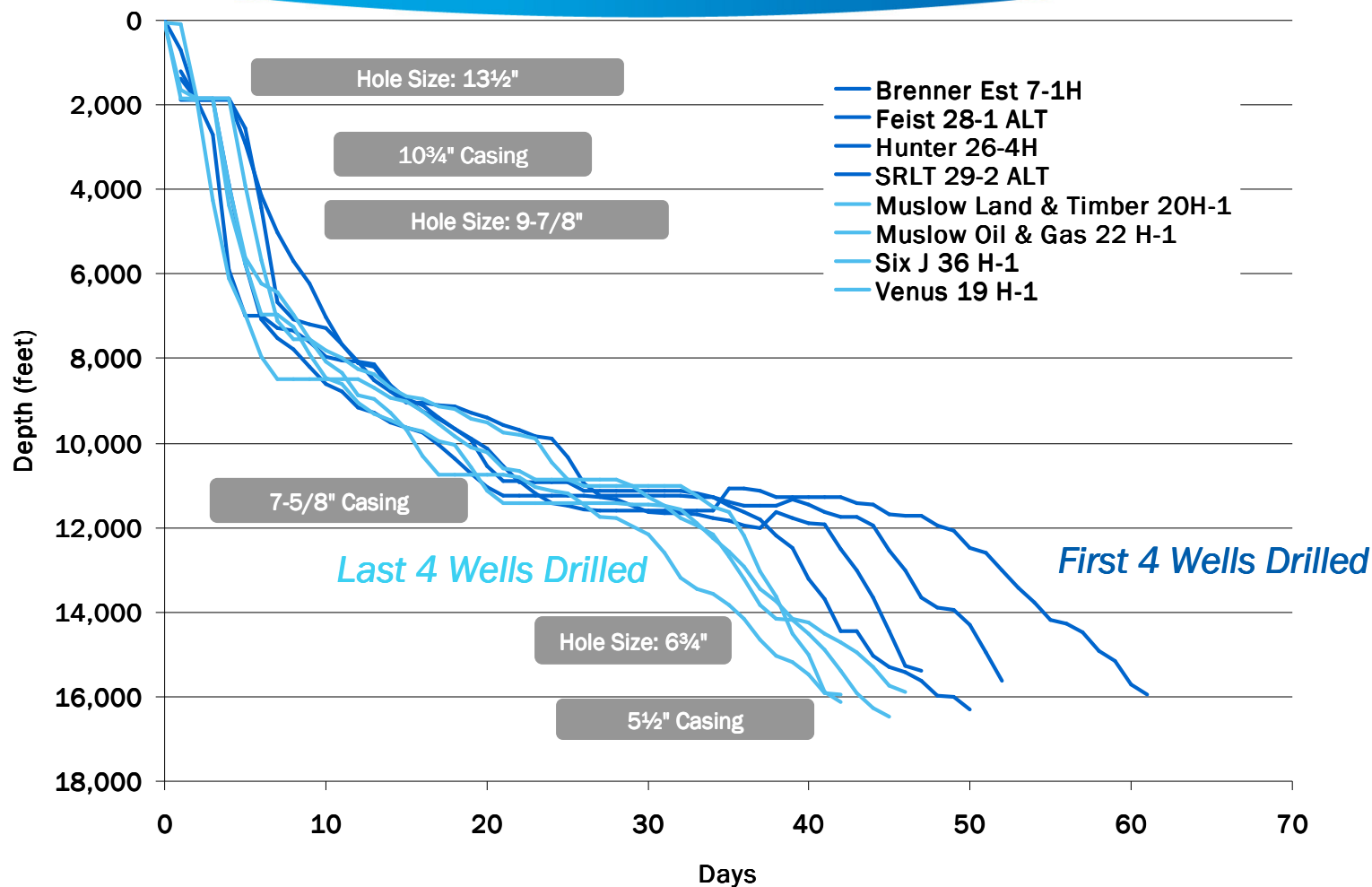
- Superpad with one rig working



- Superpad with two rigs working



# Haynesville Shale – Days vs. Depth



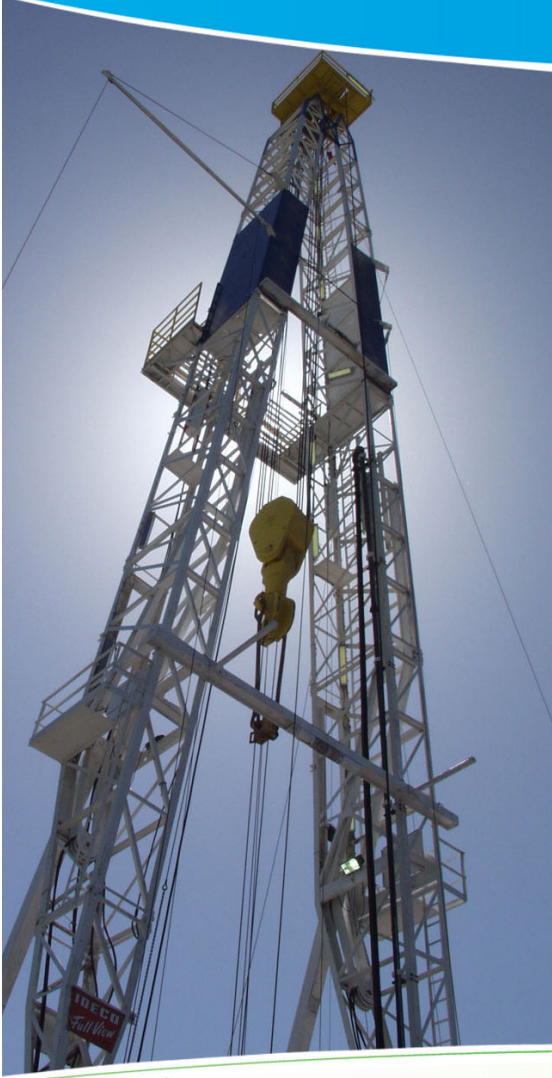
# Haynesville Shale – 80/20 PXP Partnership



- Closed on July 1, 2008
- 80% CHK/20% PXP under JV and AMI
- PXP initially assigned 20% interest in 550,000 net acres
  - \$3.3 billion net to CHK for transaction
  - \$1.65 billion cash and \$1.65 billion carry of 50% of CHK's 80% share of drilling & completion costs
- PXP received 75% NRI with CHK retaining ORRI as to any difference
- CHK retained all rights from surface to base of Cotton Valley
- CHK retained all working interest in wells spud prior to July 1, 2008
- Second well: Venus 19 H-1 spud July 2, 2008, currently being completed
- First producing well: Muslow 22 H-1, IP >9 mmcf/day
- CHK cost basis ~\$1,400/net acre after PXP promote



# Haynesville Shale – Drilling Program & Completion Opportunities



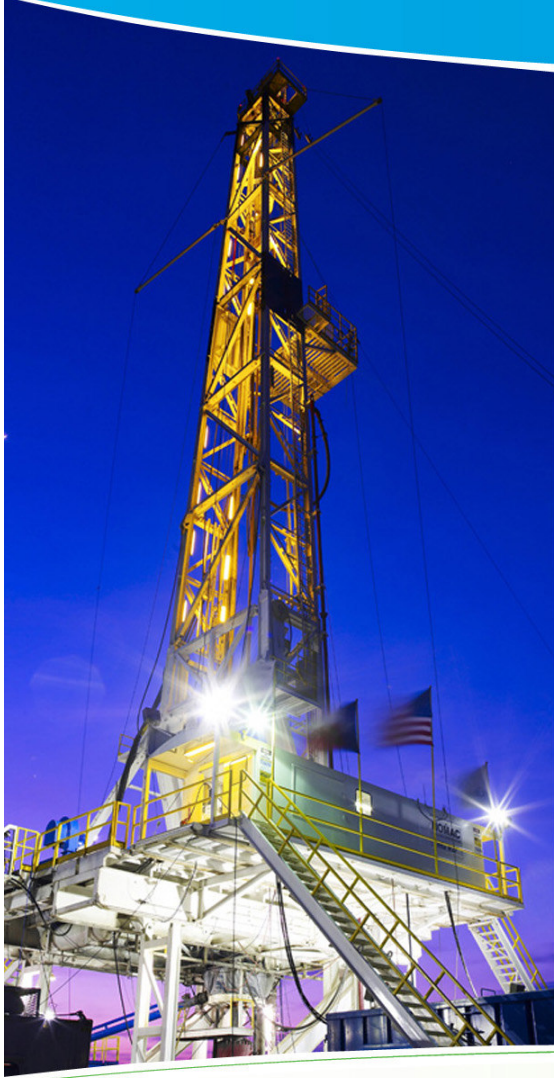
- **Drilling program:**

- Superpad drilling saves location costs
- Superpads have smaller environmental footprints
- Water based mud in laterals
- Reduce motor/MWD inefficiencies
- Reduce days & costs with repeatable program
- Learning curve efficiencies
- Economies of scale

- **Completion:**

- More sand – currently pumping 600-750 lbs/lateral foot
- Varying mesh sizes & percentages to get optimum results
- Fluid systems – Increase use of slickwater systems
- Drill out / clean out improvements
- Tighter perforation cluster spacing (60' vs. 100')
- Increasing frac stages from 5 to 10
- Economies of scale

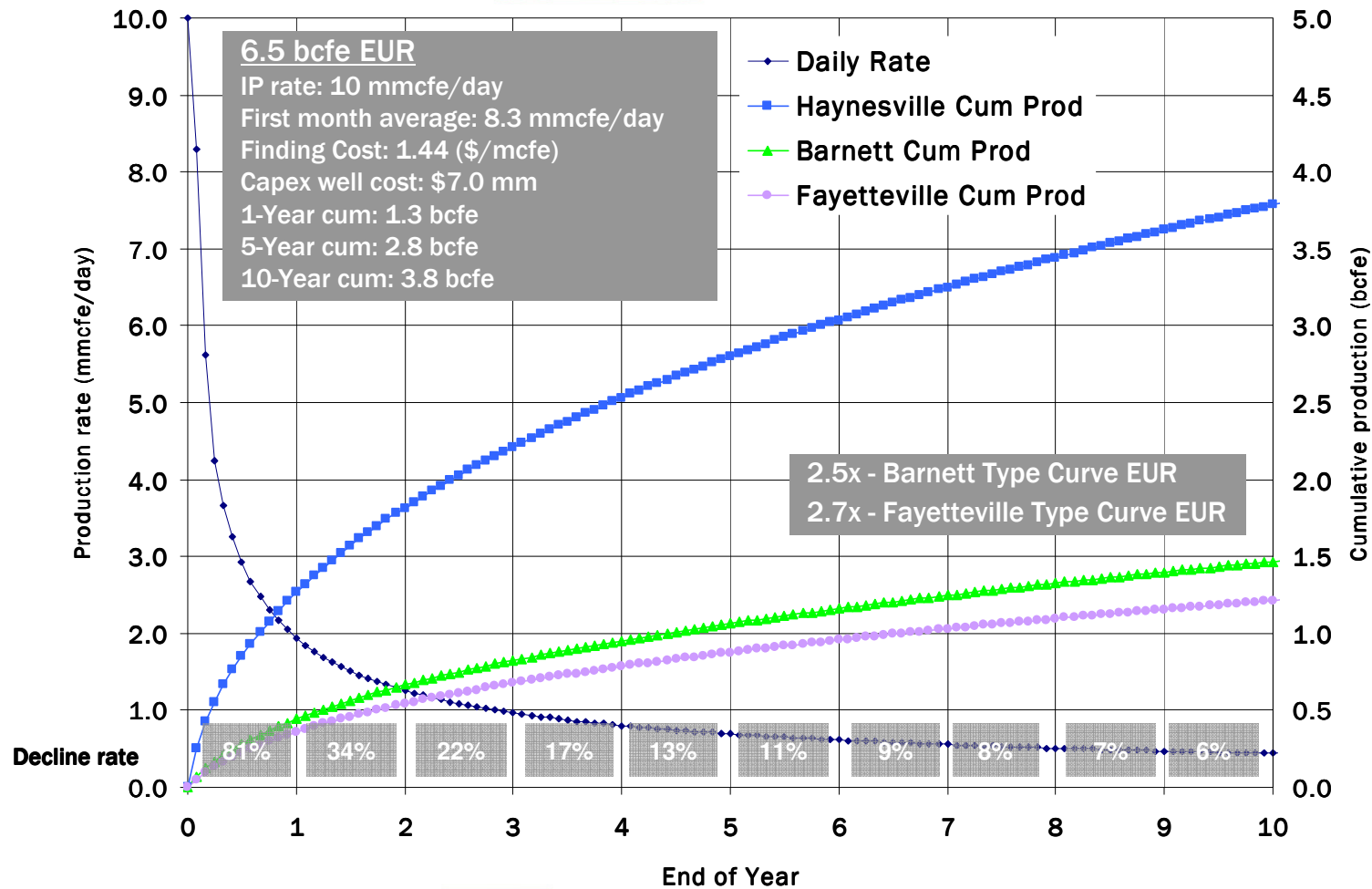
# Haynesville Shale – Development Plan



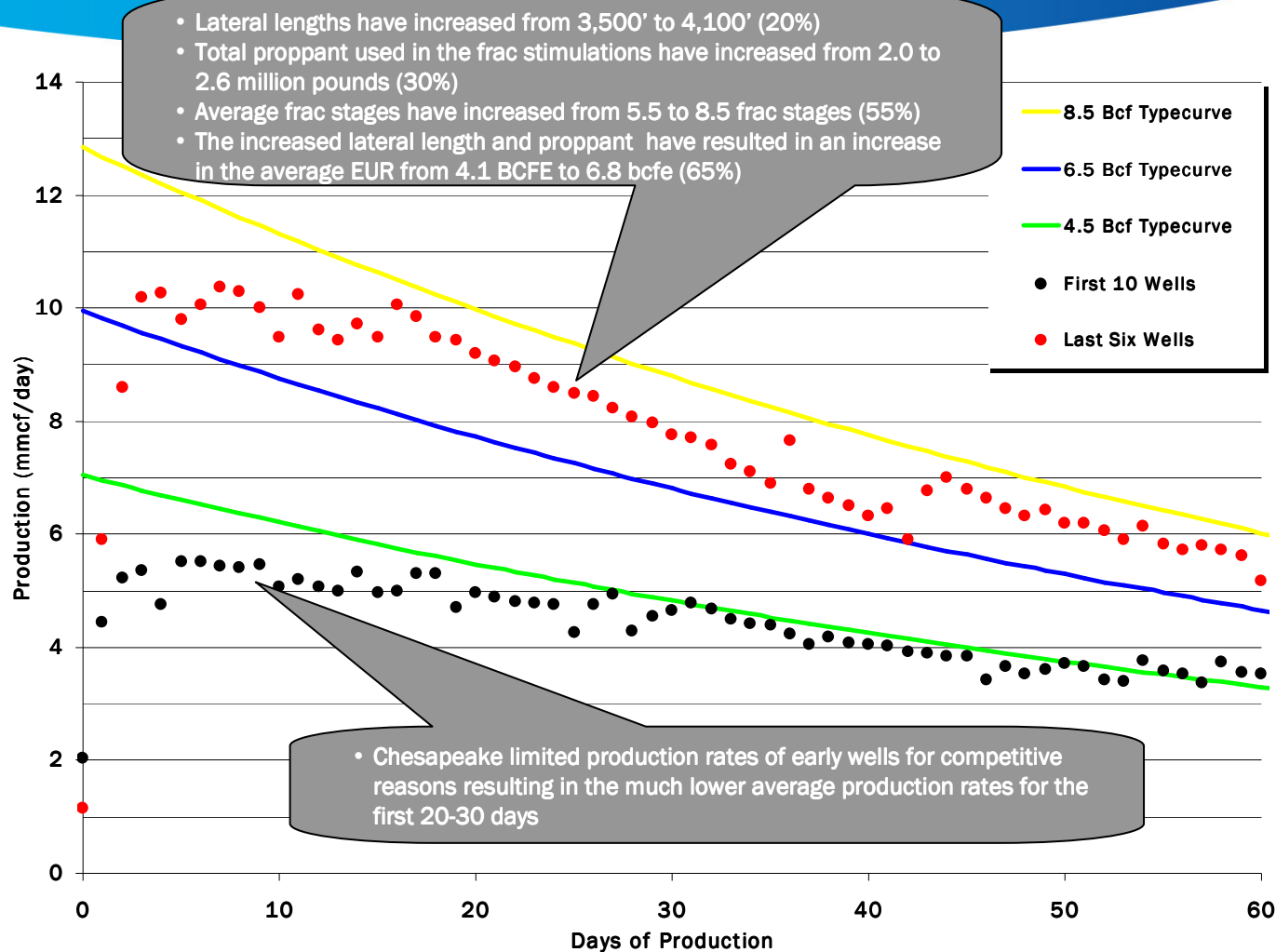
- CHK net leasehold acres of 480,000 without PXP
- 80-acre spacing (8 wells per section)
- 3,000 potential net wells to be drilled
- Average IP rate 10.0 mmcf/day
  - First month average production of 8.3 mmcf/day
- 4.5 - 8.5 bcfe per well (6.5 bcfe mid-point EUR)
- Drilling and completion costs of \$7.0 million per well
  - Drillbit F&D cost of \$1.44 per mcf at 6.5 bcfe EUR
- 4,500' average horizontal lateral length
- 8 - 10 stage fracture stimulation
- Days to drill well: 45 - 50 days
- Total unrisked unproved net reserve potential: 29 tcf
- Assumed risk factor: 50%
- Total risked unproved reserve potential: 14 tcf
- Year-end planned operated rig count
  - 2008: 14 rigs
  - 2009: 35 rigs
  - 2010: 45 rigs



# Haynesville Shale – Pro Forma Horizontal Well Profile

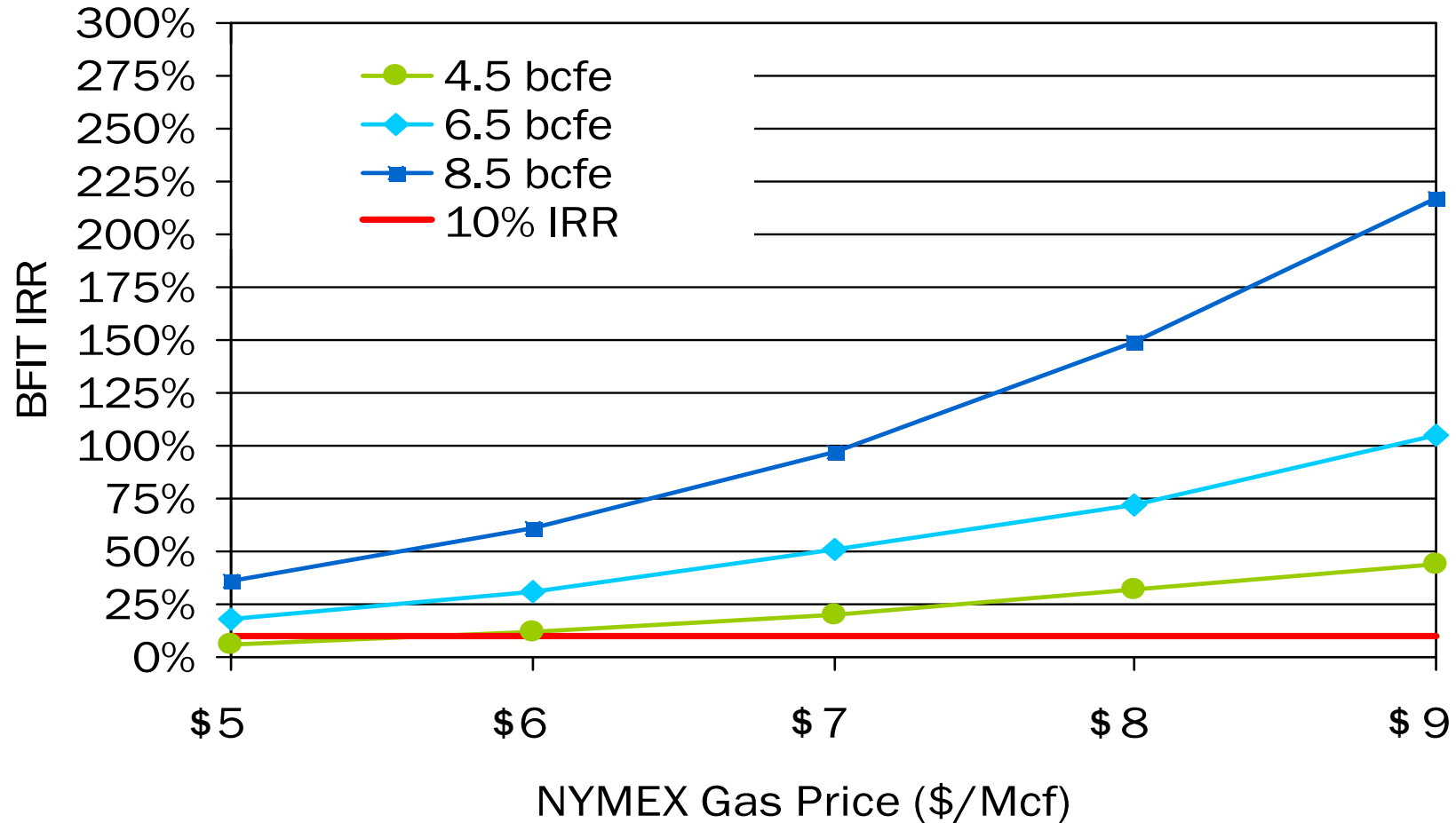


# Haynesville Shale – Horizontal Well Performance

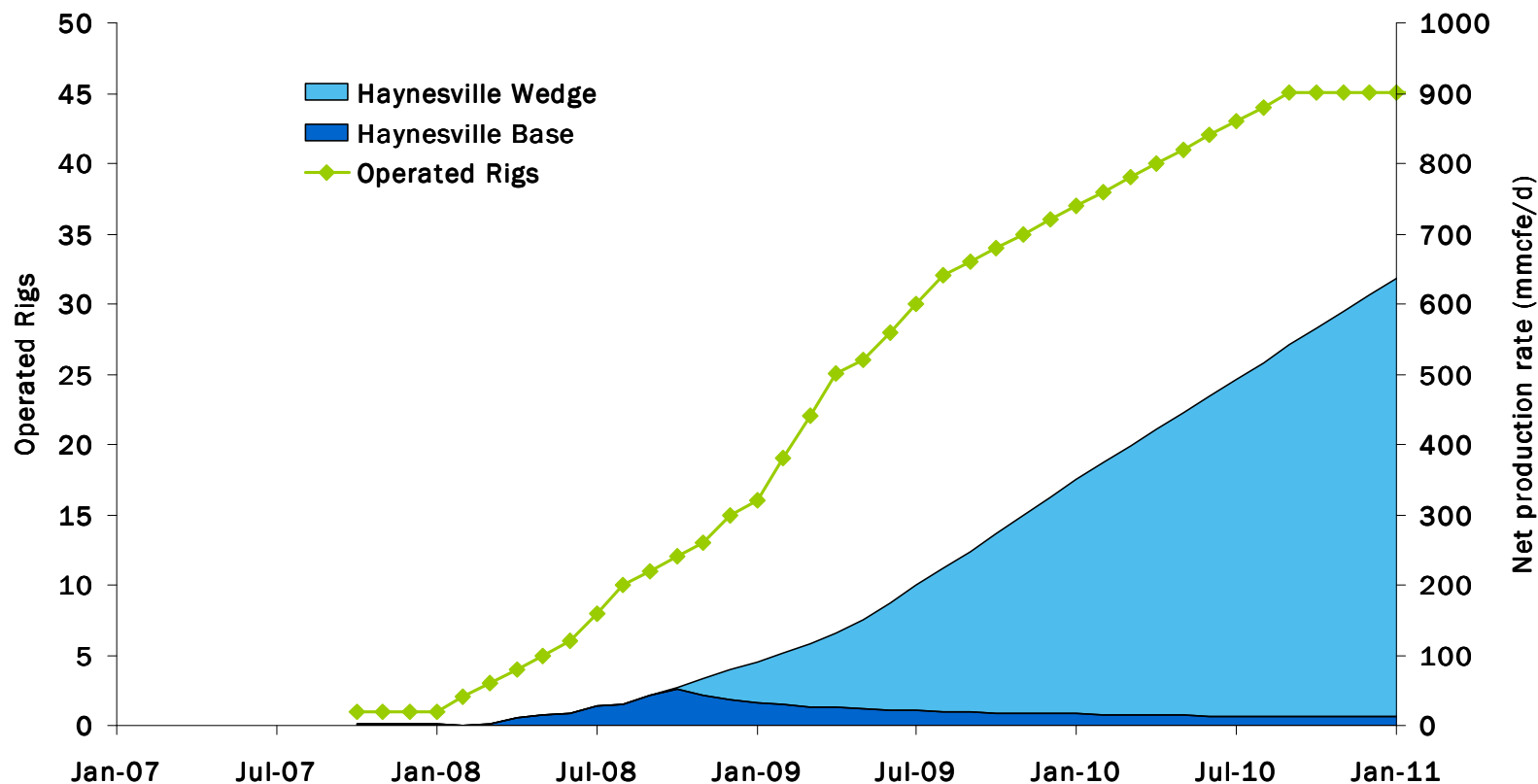




# Haynesville Shale – Rate of Return Profile



# Haynesville Shale – Growth Profile



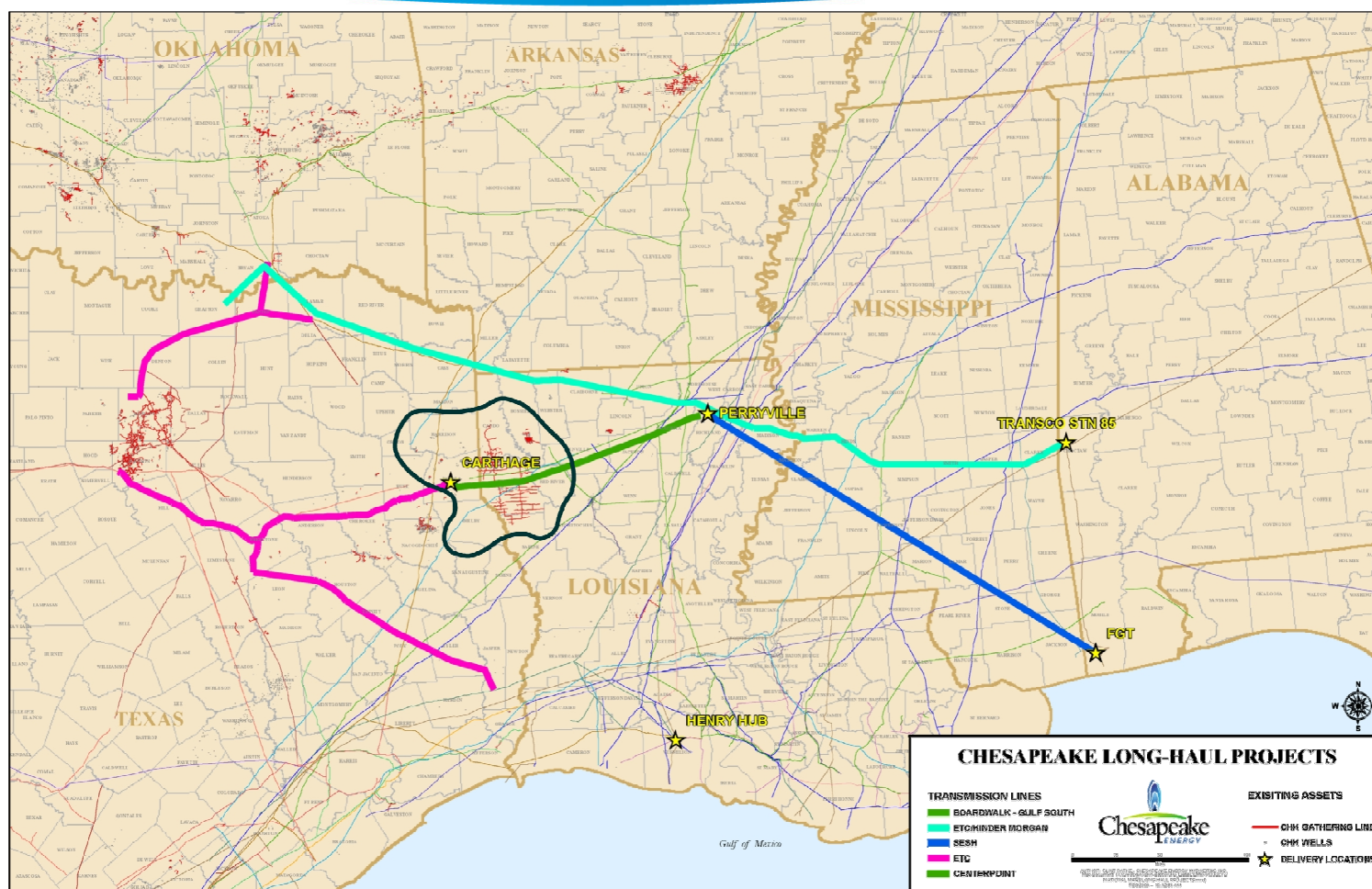
# Haynesville Shale – Gathering and Pipeline Infrastructure



- **Existing CMP\* Gathering Systems/Pipeline Infrastructure**
  - Gathering system capacity – 170 mmcf/day
  - 4” – 12” gathering pipelines; 800 - 1,100 psi operating pressure
  - Central facilities for dehydration, treatment
- **Planned CMP\* Gathering Systems/Pipeline Infrastructure**
  - 6” - 24” gathering pipelines, 300+ miles of proposed ROW
  - Gathering system design and capacity based on:
    - CHK leasehold
    - Drillsite locations
    - Future transmission pipelines
  - Central facilities with compression, amine treatment, and dehydration
    - Typical facility capacity is 250 - 400 mmcf/day
    - 2 Large facilities with capacity = 1.0 – 2.0 bcf/day per facility
    - Gathering systems will have a high pressure and mid pressure pipeline system to minimize compression operating costs



# Haynesville Shale – CHK Long-Haul Projects Under Consideration



# Haynesville Shale – Marketing Options



- **Current Pipeline Options:**

- Current capacity (including backhaul to Carthage) = 3.0+ bcfe/day
- Existing pipelines with existing or planned CHK interconnects
  - Centerpoint 42" pipeline (Line CP)
  - Boardwalk Pipeline 42" pipeline & Texas Gas Trans 20" pipeline
  - Tennessee Gas Pipeline 20" pipeline
  - Crosstex LIG system
  - Regency

- **Potential future projects:**

- Potential capacity (firm transportation to Perryville and/or Henry Hub) = 8-10 bcfe/day
- CHK gathering system well positioned to connect with any new Haynesville Shale projects
- Evaluating seven different proposals for large diameter takeaway pipelines (36"- 42") from Carthage to Perryville



# Barnett Shale Overview

Tom Layman, Geoscience Manager – Barnett Shale





# Barnett Shale – Overview



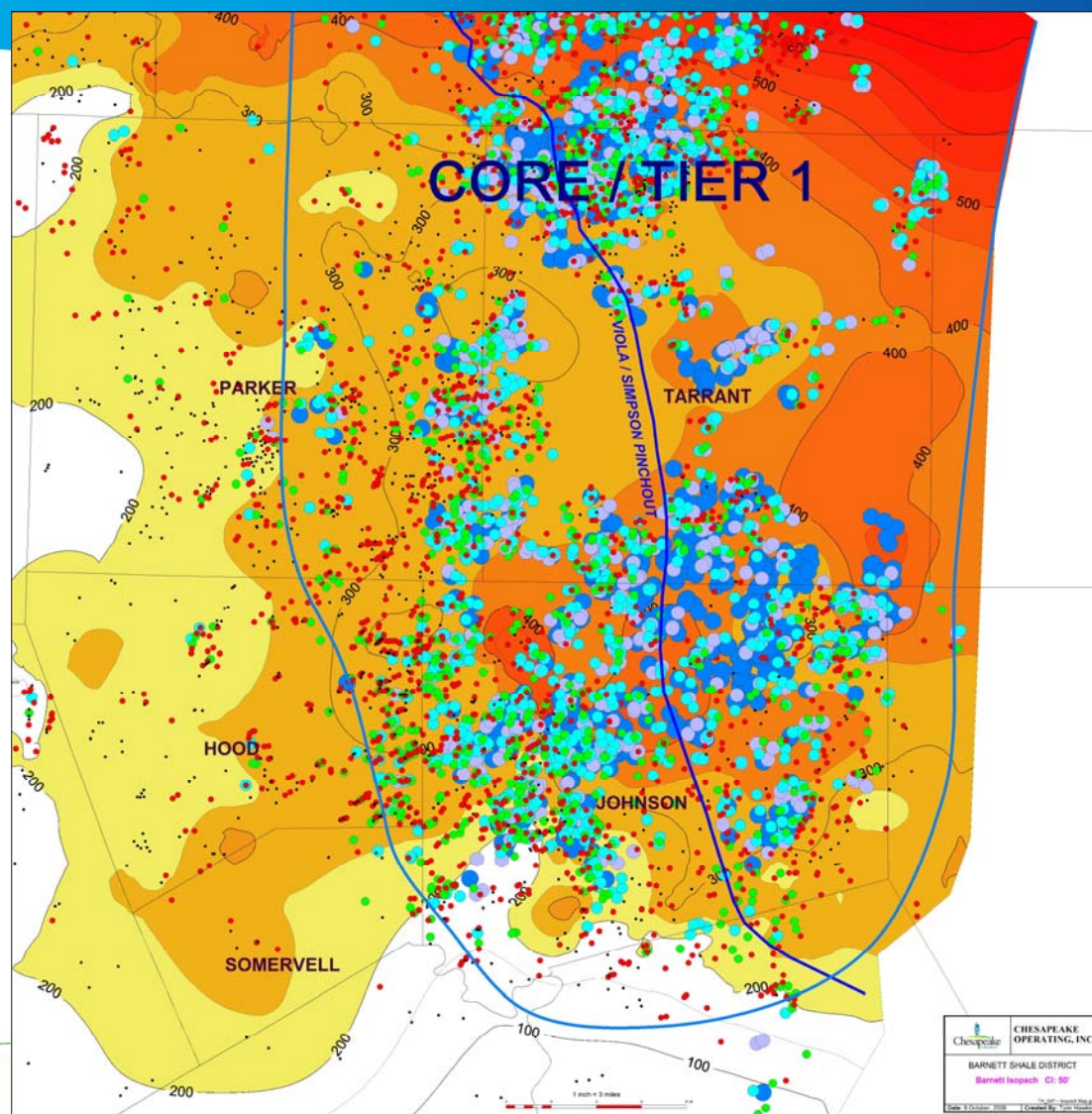
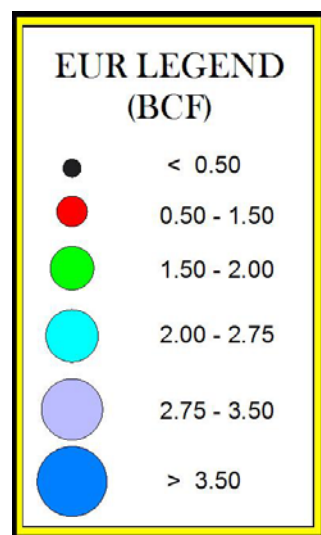
- CHK is the second-largest producer, most active driller and largest leasehold owner in the Core and Tier 1 sweet spots of Tarrant, Johnson and western Dallas Counties
- CHK's industry leading urban-drilling expertise and substantial scale have become significant competitive advantages
- Currently operating 40 rigs to further develop ~315,000 net acres of leasehold, of which ~280,000 net acres are located in the prime Core and Tier 1 areas
- Current net production of ~560 mmcf/day is up 37% YTD
  - Anticipate reaching ~670mmcf/day net by YE'08, ~920 mmcf/day net by YE'09
- ~3,000 potential net risked wells in inventory to develop ~0.8 tcf of PUD and 5.2 tcf of risked unproved reserves
- Barnett Shale drilling accounts for ~\$1.6 billion, or 34%, of CHK's 2008 drilling capex

# Barnett Shale – Background



- Entered play in 2004 via acquisitions
- Drilled first horizontal wells in 2005 in Johnson County
- Drilled first horizontal wells in 2006 in Tarrant County
- Recognized sweet spots in Core / Tier 1 area early and aggressively leased
  - Hired up to 1,300 Lease Brokers
- Ramped up to 43 operated rigs in 2008, scaling back to 33 rigs by YE'08 based on gas price weakness
  - Exclusively focused in Core / Tier 1
- **CHK operates ~1,100 producing wells**
  - ~33% of total wells in Core / Tier 1 are CHK operated

# Best Results in the Core & Tier 1 Sweet Spots



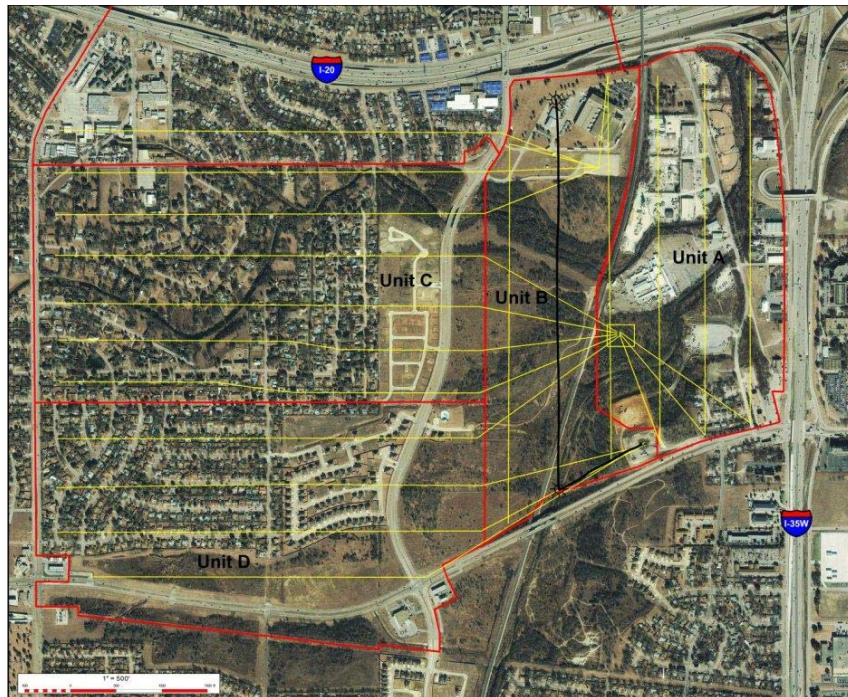


# Barnett Shale – Characteristics Core / Tier I Area



● Depth TVD	5,400' – 9,600'
● MD (Horizontals)	8,000' – 14,500'
● Thickness	200' – 500'
● Total Organic Content (TOC)	2% - 7%
● Thermal Maturity (Vitrinite Reflectance)	1.1% – 1.7%
● Average Log Porosity	~7%
● Pressure (psi/foot)	0.42 - 0.52
● Water Saturation	25% – 35%
● Gas-in-place (bcfe/section)	75 – 200
● Anticipated Recovery Factor	25% – 50%
● Average EUR / Horizontal Well (bcfe)	2.65

# Barnett Shale – Advantages



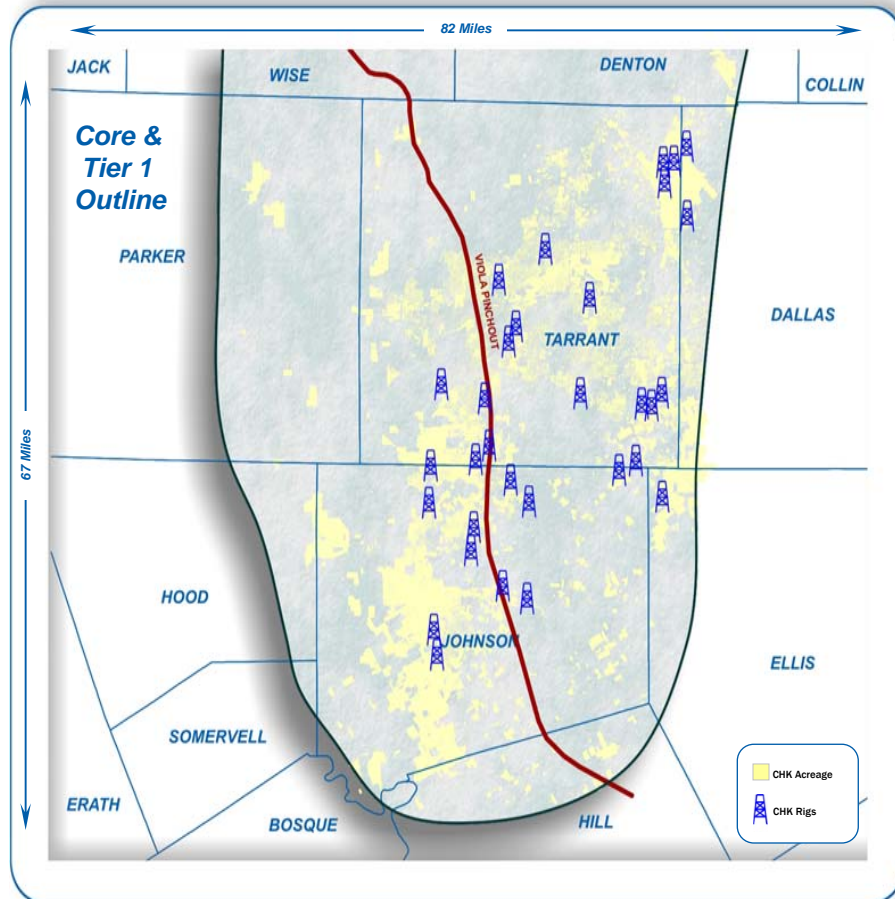
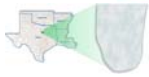
## ● Advantages inherent to the Barnett Shale play

- Good rock - thickness, maturity, gas content
- Favorable rock mechanics
- Frac barriers present
- Proven, consistent drilling results
- Technology transfer to and from other shale plays in CHK portfolio

## ● CHK advantages

- Proven track record; 1,100 horizontal wells drilled to date
- Continue to use technology and lessons learned to reduce cycle time
- Experienced in drilling in urban areas / DFW Airport
- Strong public affairs and public relations team in place in Fort Worth

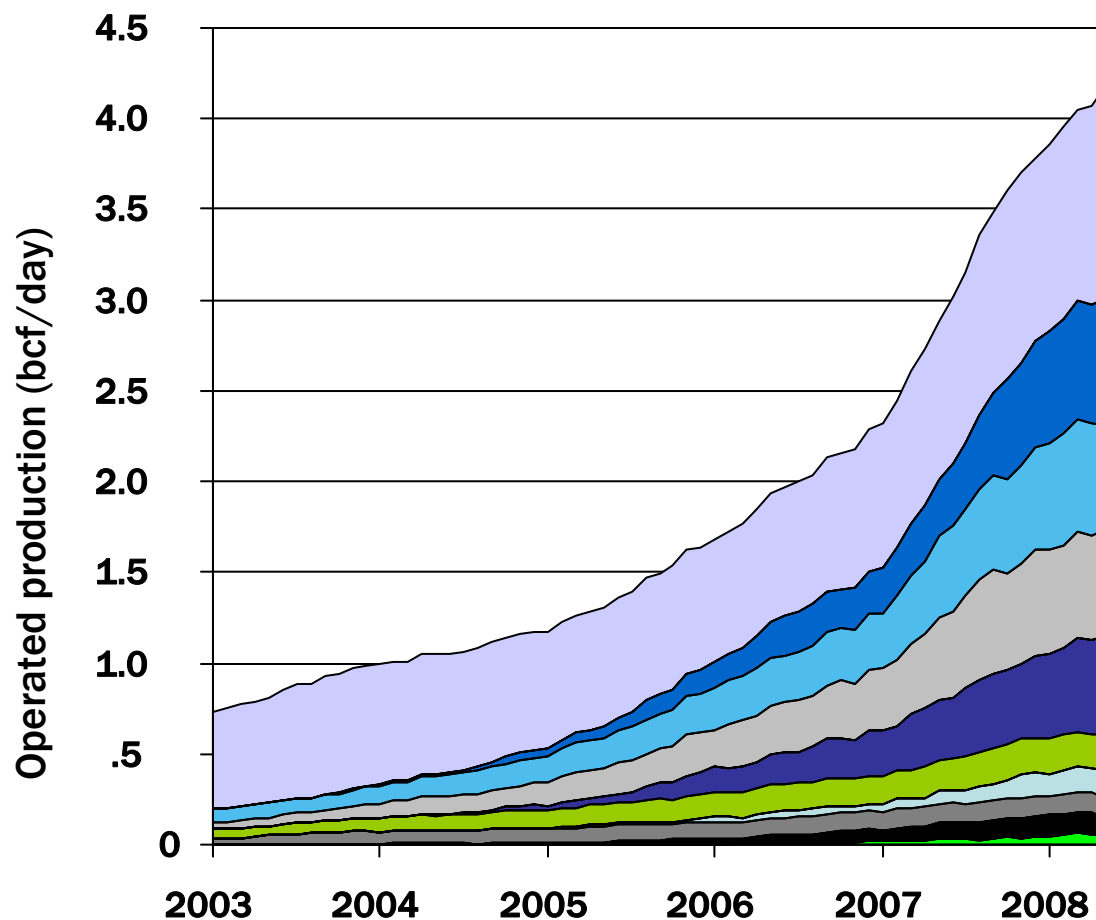
# Barnett Shale – Leasehold Position



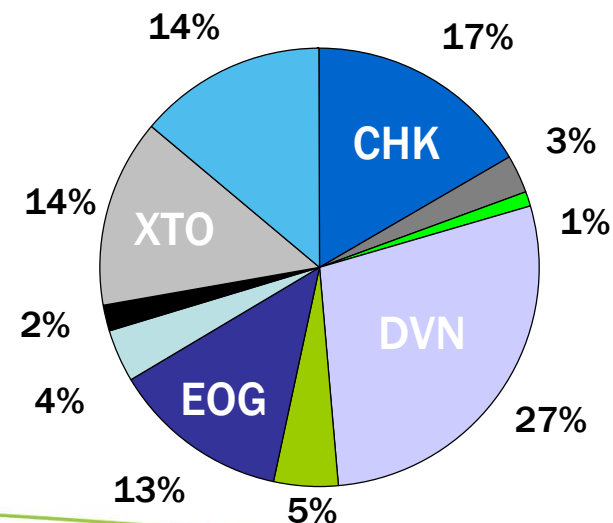
- CHK currently owns ~315,000 net acres of leasehold in the Barnett Shale, including ~280,000 net acres in the Core and Tier 1 area
- Slowing down leasing campaign; add ~5,000 net acres of leasehold per quarter
- Should finish leasing campaign by 2010 with 325,000 - 340,000 total net acres in the play, of which 300,000 - 320,000 should be in the prime Core and Tier 1 area
- CHK working hard to reduce lease bonuses from \$15,000 - \$20,000/net acre to \$5,000 - \$10,000/net acre



# Barnett Shale – Gross Production

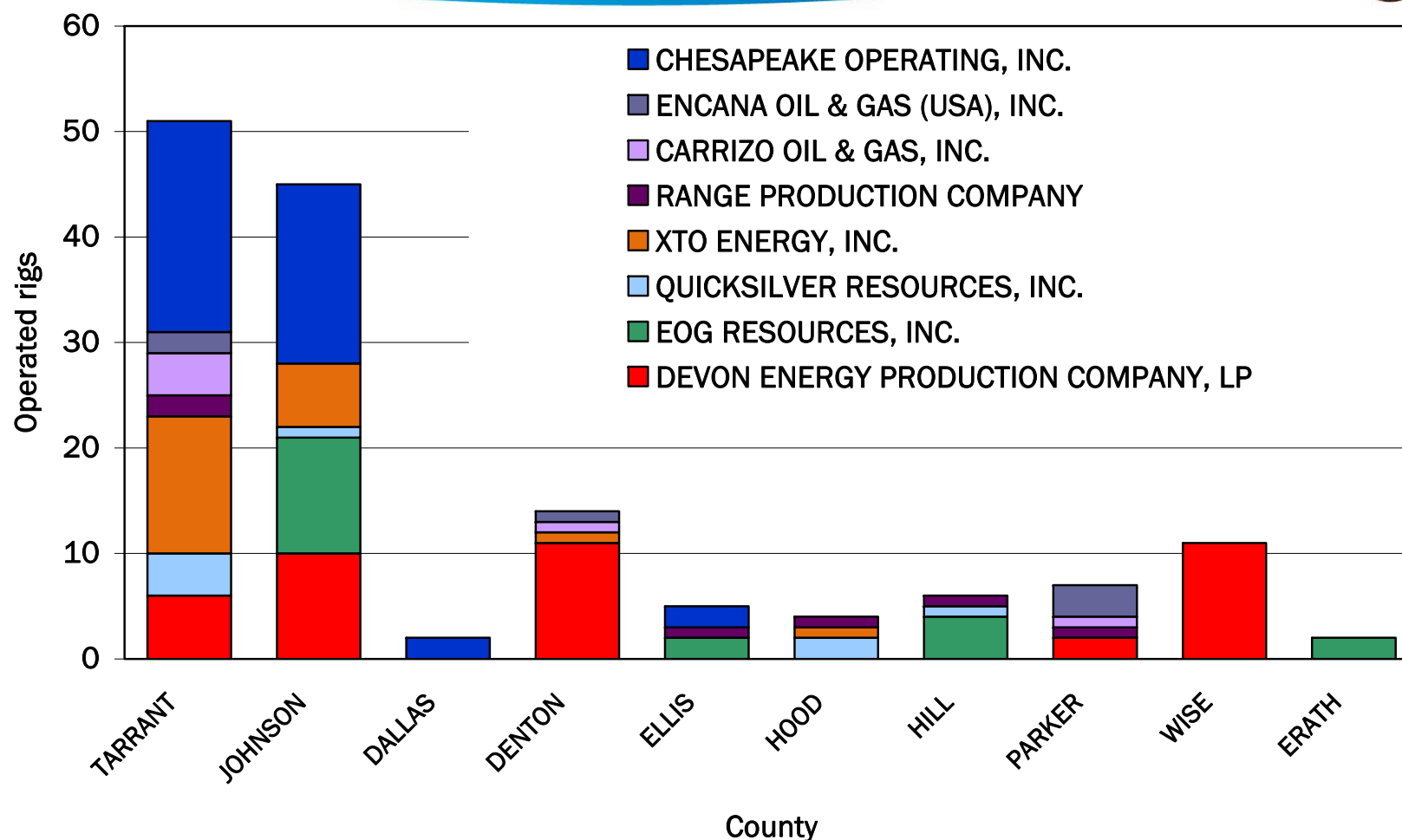


June 2008 Production  
4.3 bcf/day



Chesapeake is 2<sup>nd</sup> largest producer in the basin;  
current gross operated volumes exceed 800 mmcf/day

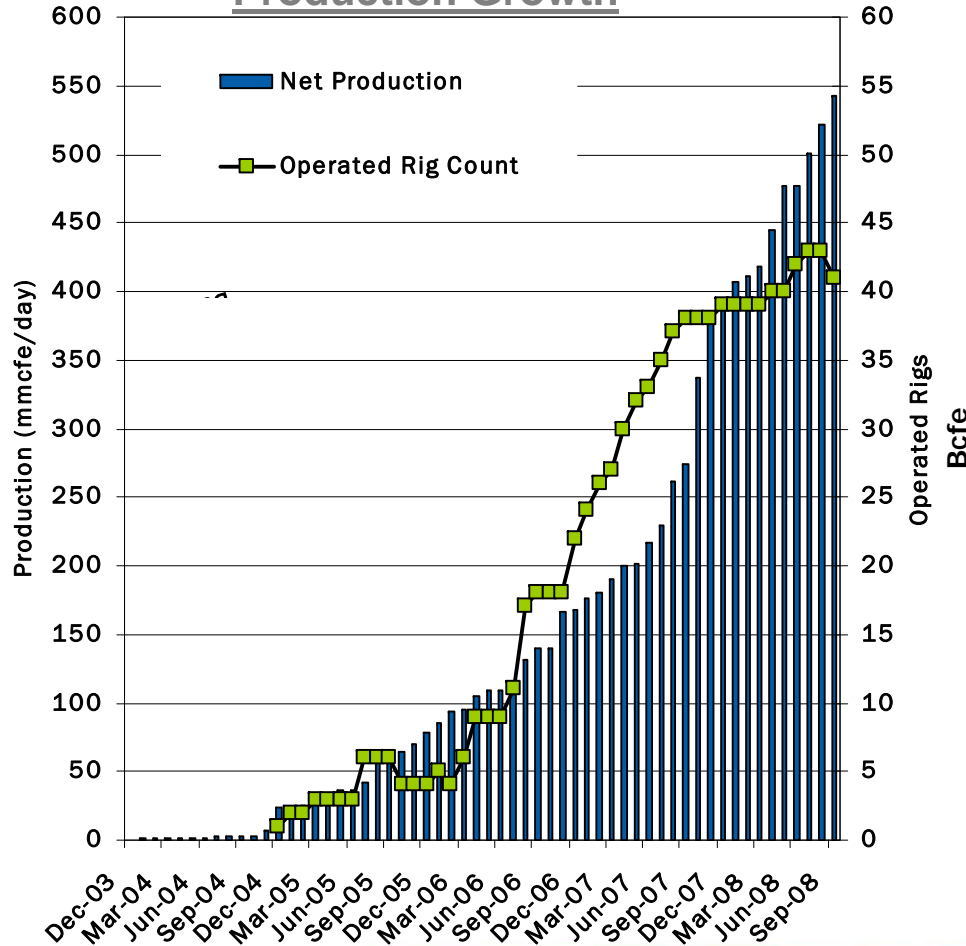
# Barnett Shale – County Rig Counts by Operator



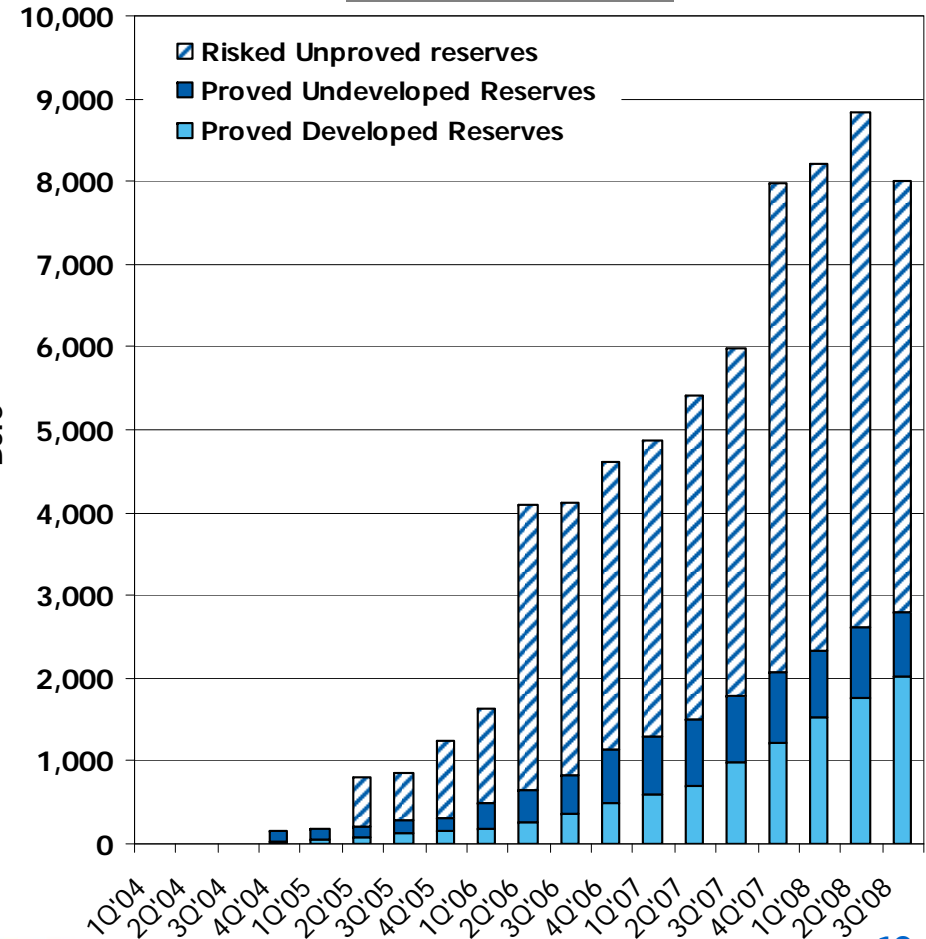
# Barnett Shale – Production and Reserve Growth Profile



## Production Growth



## Reserve Growth





# Barnett Shale – Operations Excellence



- Early recognition of sweet spots in Johnson and Tarrant Counties
- Delineation of Core / Tier I Area key to our success in the play
- Stayed away from marginal Barnett areas, a key hallmark of our strategy: identify the core and go after it
- Focus on Reservoir Characterization and Steering of Laterals
  - Pilot wells
  - Geosteering
- Continual Optimization of Fracture Stimulation Design
  - Will pump >1,500 fracs in 2008
- Focus on Lateral Length
  - 3,000' or longer is better

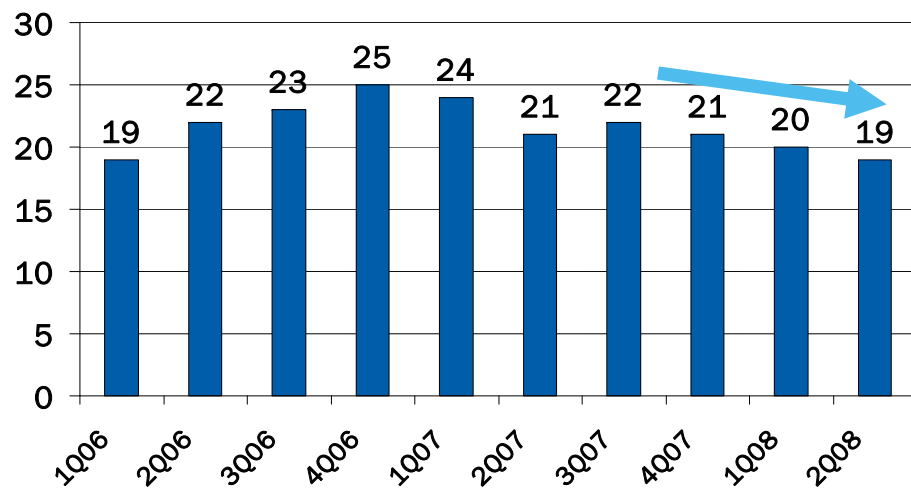
# Urban Drilling & Development Expertise



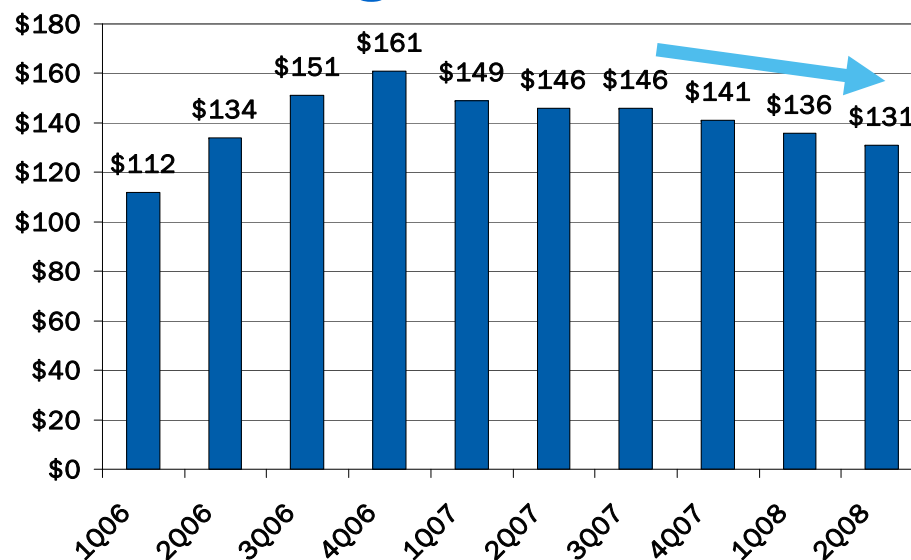
# Barnett Shale – Increasing Drilling Efficiencies



## Drilling Days Per Well



## Drilling Cost Per Foot



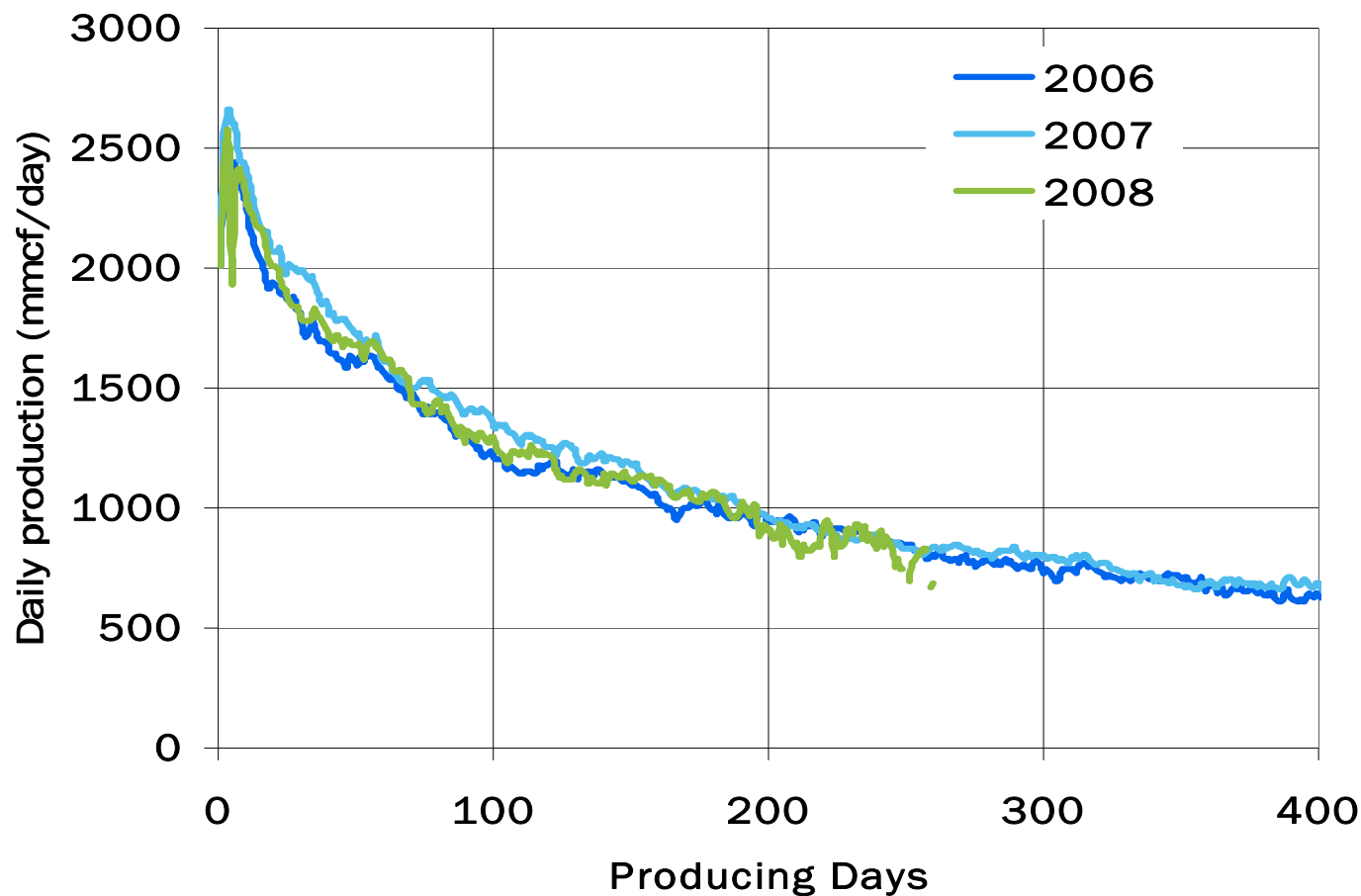


# Barnett Shale – Development Plan

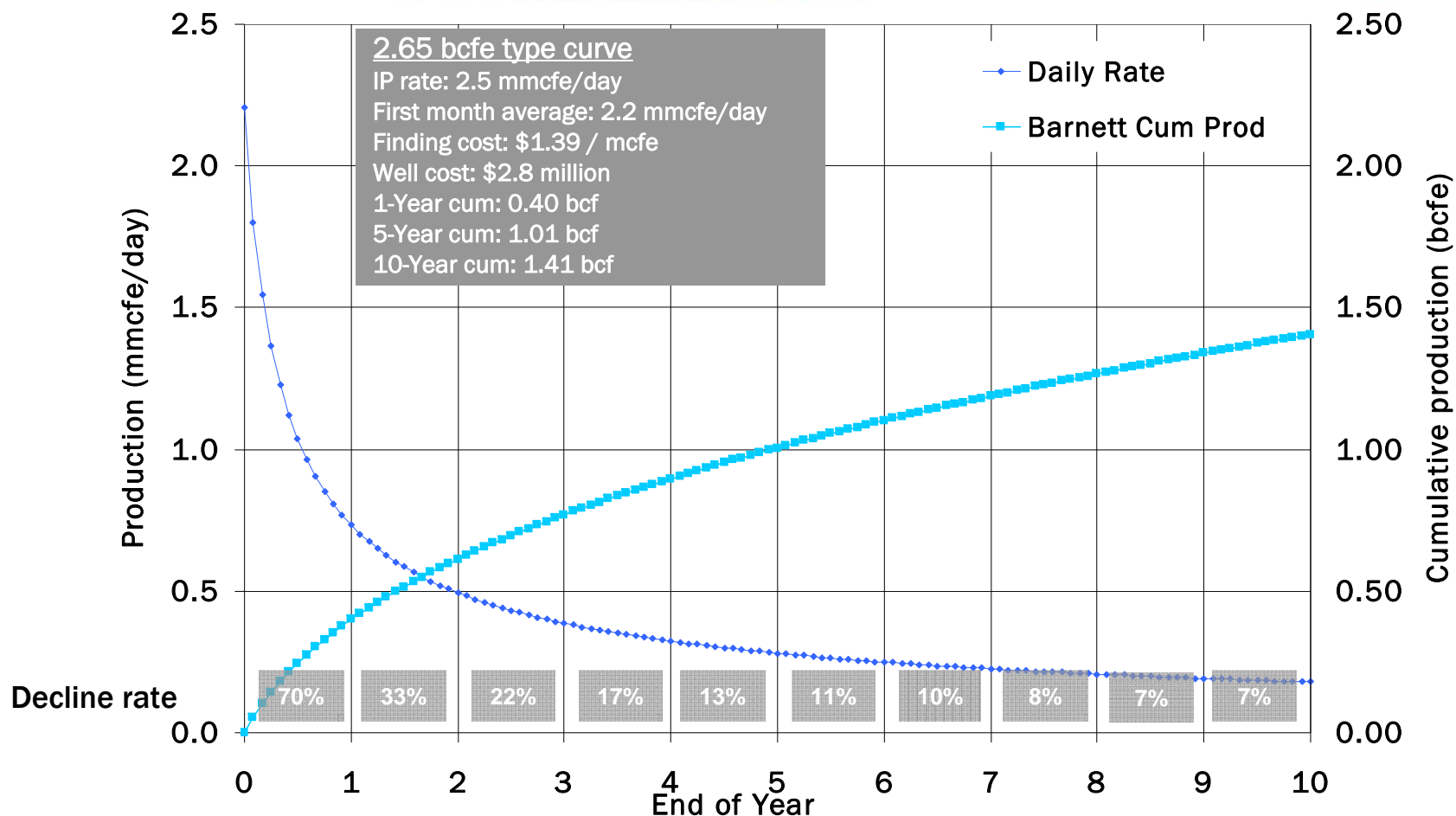


- 280,000 net acres of leasehold in the Core and Tier 1 area
- 60-acre spacing
- ~3,000 potential net risked wells to be drilled
- Average IP 2.5 mmcfe/day
  - Average first month production of 2.2 mmcfe/day
- Average EUR of 2.65 bcfe/well
- Drilling and completion costs of \$2.8 million per well
  - Drillbit F&D cost of ~\$1.39 per mcfe
- 2,900' average horizontal lateral length
- 3 - 4 stage fracture stimulation
- Days to drill wells: 20 - 23 days
- Total unrisked unproved reserve potential: ~6.2 tcf
- Assumed risk factor: 15%
- Total risked unproved reserve potential: ~5.2 tcf
- Average operated rig count per year: 40 rigs in 2008, 33 rigs in 2009 and 2010

# Barnett Shale – Normalized Production

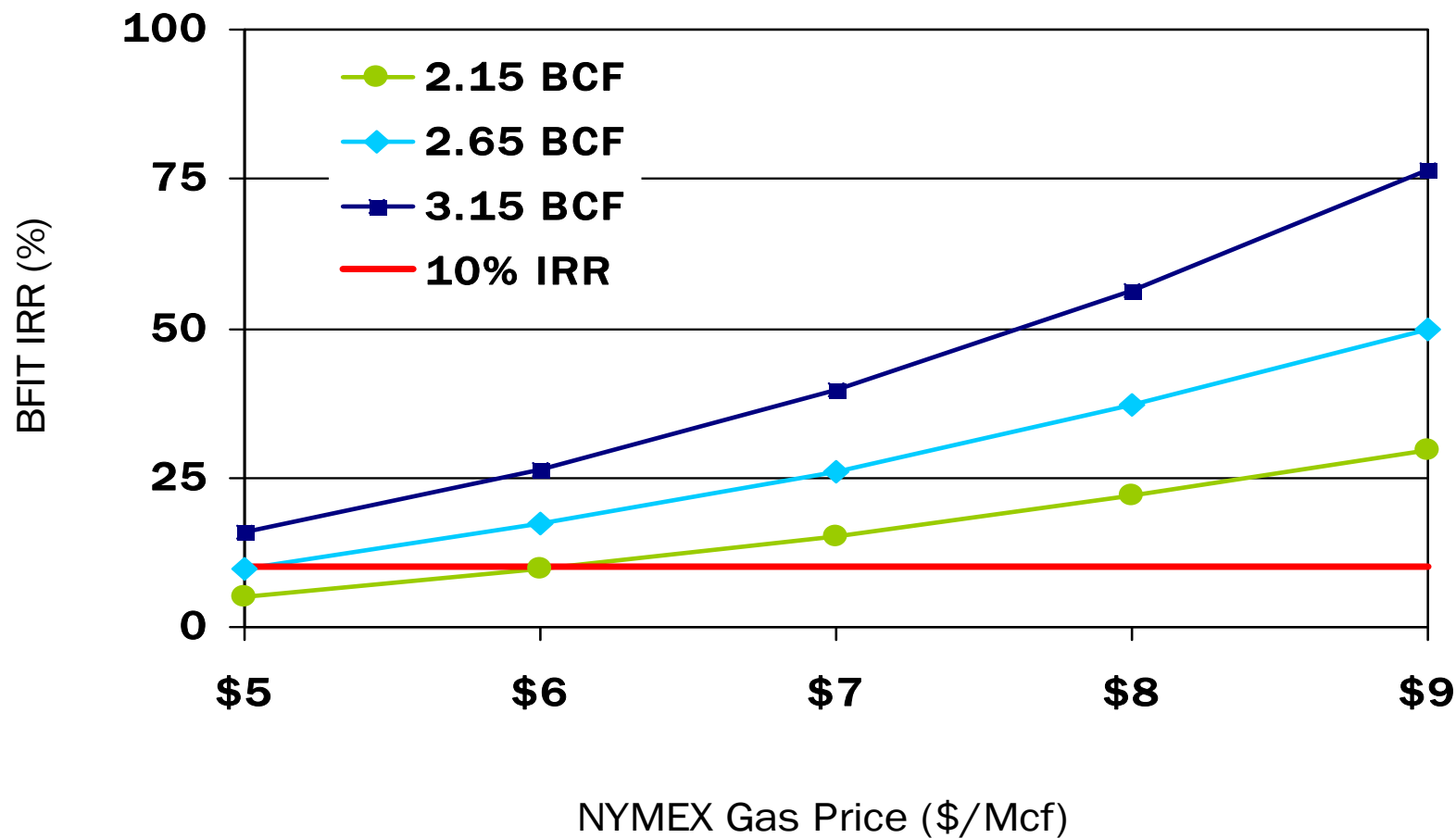


# Barnett Shale – Pro Forma Horizontal Well Profile

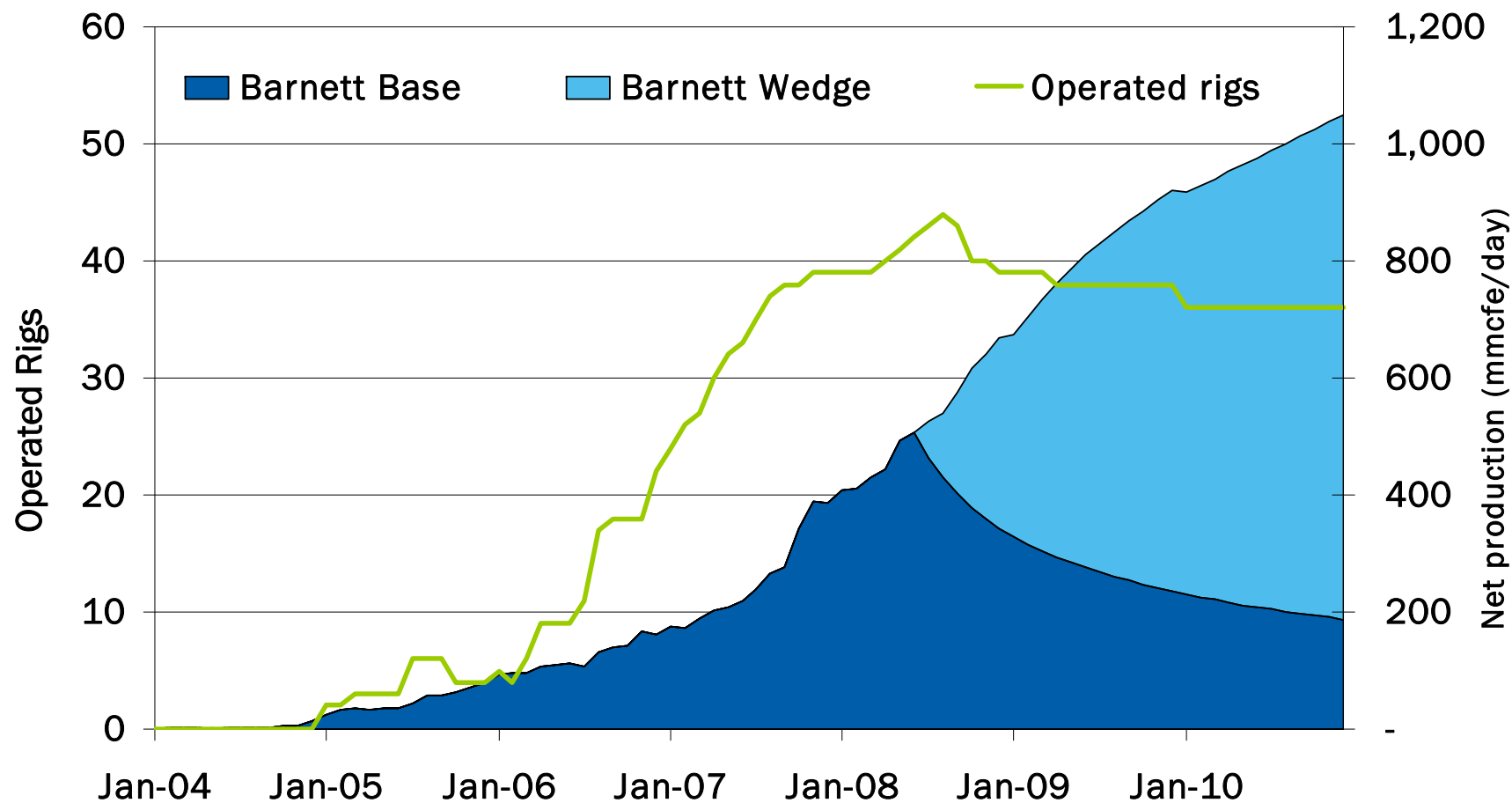




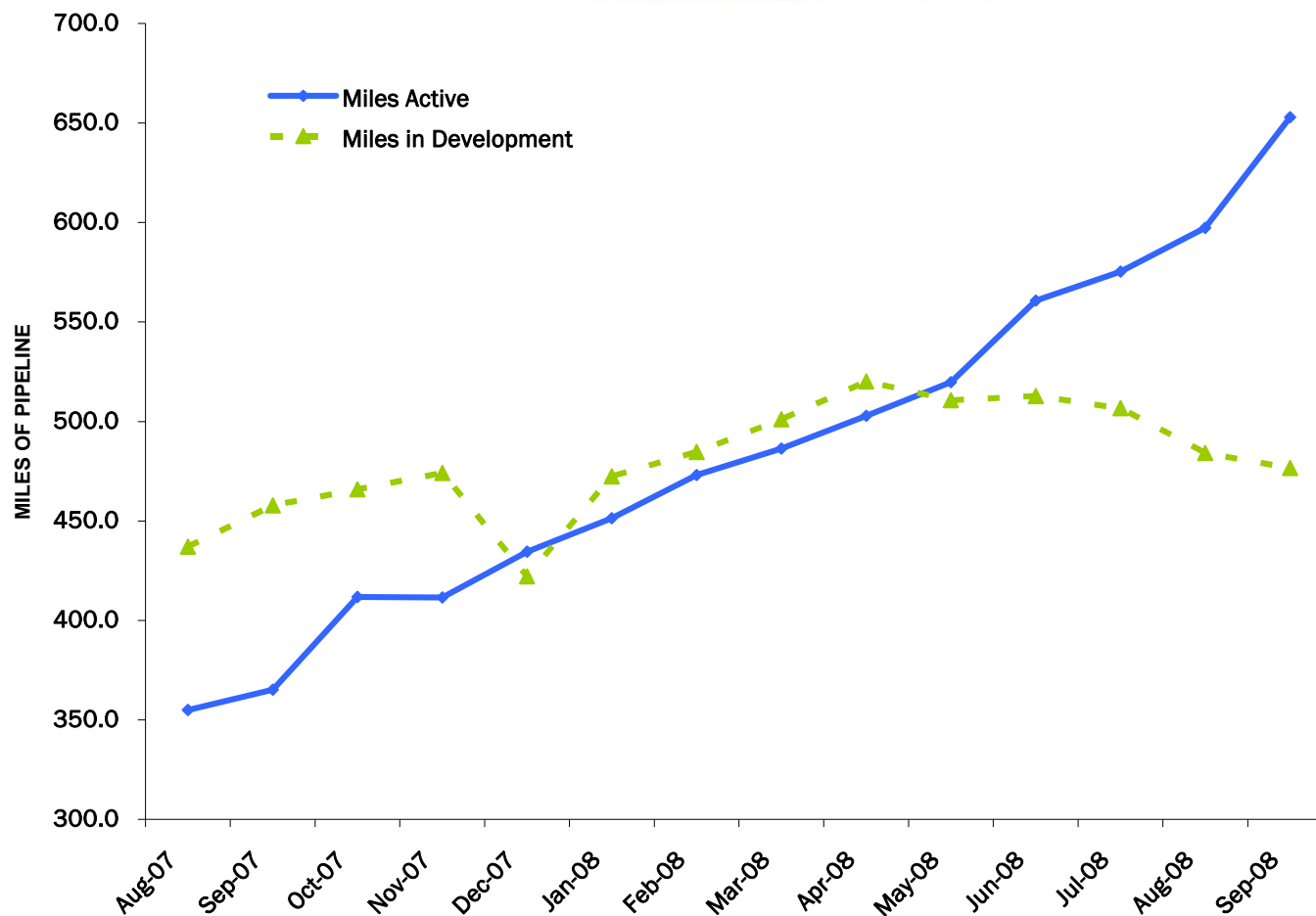
# Barnett Shale – Rate of Return Profile



# Barnett Shale – Growth Profile



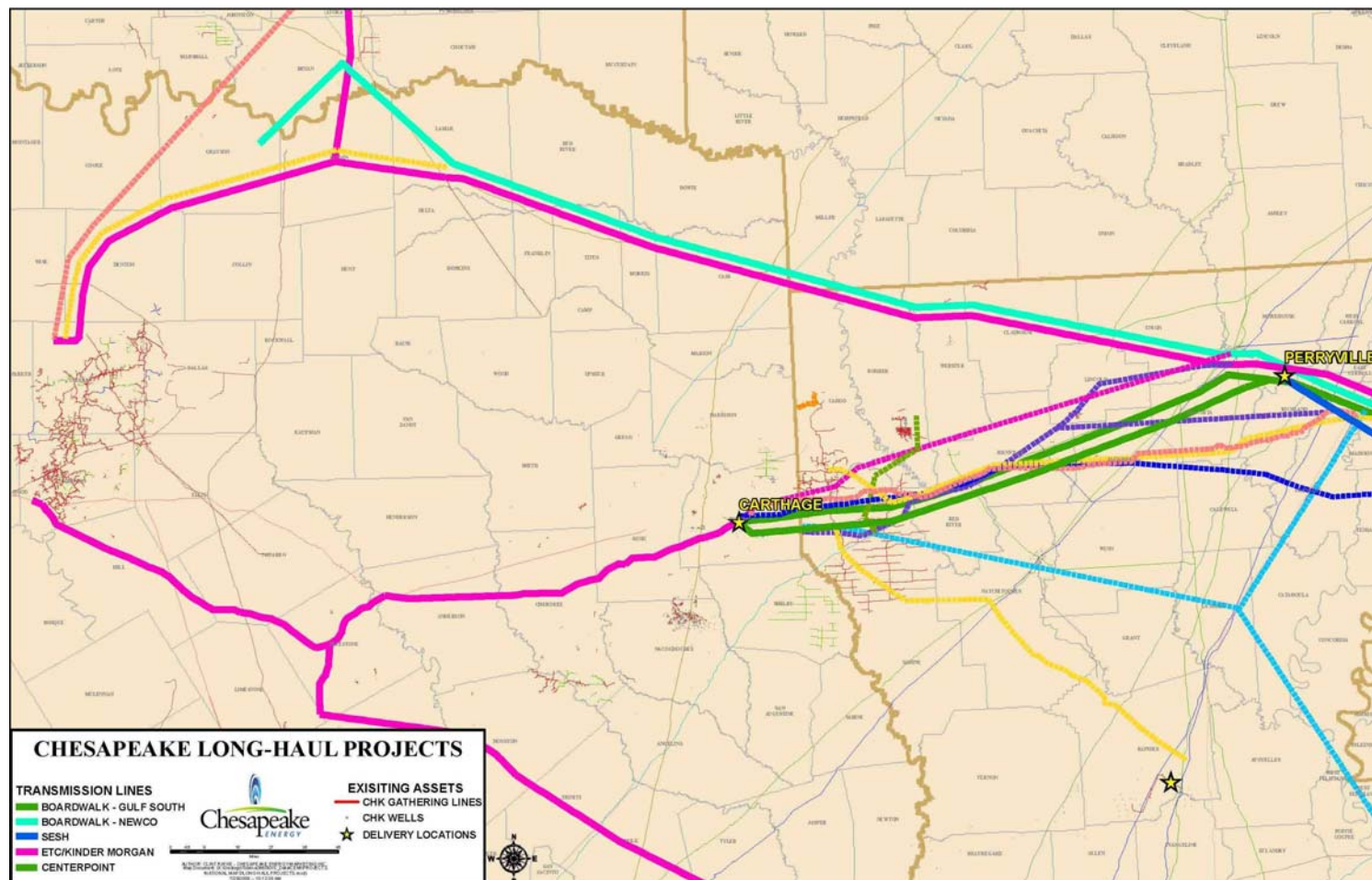
# Barnett Shale – Gathering System



- ~650 miles of active pipeline in the Barnett and approximately 475 miles of pipeline in various forms of development
- ~65% of the well pads have been connected to pipeline
- ~120,000 hp of compression is active and an additional 100,000 hp is in various stages of development



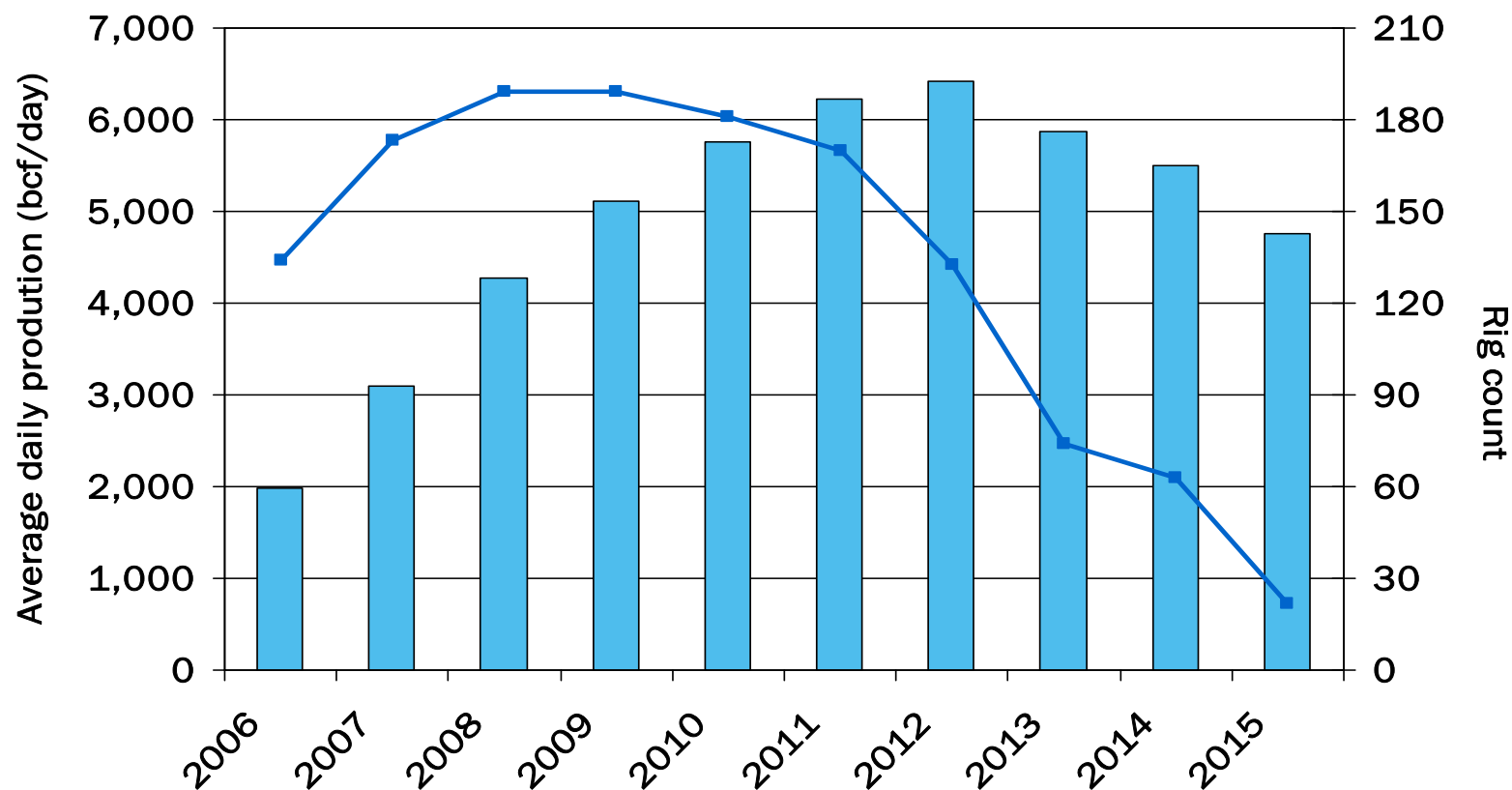
# Barnett Shale – Long Haul Pipelines



# When Will Barnett Shale Production Peak?



Predicting peak of 6.0 - 6.5 bcfe/day in 2012 timeframe







# Fayetteville Shale Overview

Scott Sachs, VP Geosciences – Northern Division





# Fayetteville Shale – Overview



- CHK is the second-largest producer in the Fayetteville Shale and the second-largest leasehold owner in the Core area of the play
- Currently operating 18 rigs to further develop ~415,000 net acres of leasehold
- Current net production of ~145 mmcfe/day is up 46% YTD
  - Anticipate reaching ~165 mmcfe/day by YE'08, ~260 mmcfe/day by YE'09, ~300 mmcfe/day by YE'10
- ~3,700 potential net risked wells in inventory to develop = ~6.8 tcf of PUD and risked unproved reserves
  - ~9 tcf of PUD and unrisked unproved reserves
- Closed sale of 25% interest in ~540,000 net acres and ~180 mmcfe/day of production to BP for \$1.9 billion (\$1.1 billion in cash, \$800MM in carry) in September 2008
- Secured firm transportation capacity of 375 mmcf/day and an option on 125 mmcf/day on the Fayetteville Express pipeline that will be built and operated by Kinder Morgan and Energy Transfer
  - Late 2010/early 2011 completion

# Fayetteville Shale – Background



- The play was pioneered by Southwestern Energy (NYSE: SWN)
  - First Fayetteville shale production May 2004
  - First horizontal production May 2005
  - January 2005, SWN went public with their initial success claiming ~350,000 acres of leasehold
- CHK scouted SWN activity and conducted initial geoscientific analysis in 2004/2005
- In 2005, there was no infrastructure and no CHK staff east of the traditional western Arkansas production fairway (100+ miles west of Searcy)
- CHK initiated aggressive leasing program in January 2005
- CHK drilled and cored several vertical pilot wells starting in late 2005
- CHK kicked off horizontal drilling program in early 2006
- Well performance exceeded expectations; average EUR estimate increased from 1.3 bcfe/well initially to 2.2 bcfe/well today
- Now have >200 CHK operated wells producing or waiting on completion, and 18 rigs drilling
- Vendors and services are now in place locally; costs are now competitive with other plays in the industry; transportation capacity expanding rapidly

# Fayetteville Shale – Characteristics



● Depth TVD	1,200' – 7,500'
● MD (Horizontals)	3,700' – 11,500'
● Thickness	50' – 200'
● Total Organic Content (TOC)	2.0% – 5.0%
● Thermal Maturity (Vitrinite Reflectance)	1.2% – 3.0%
● Average Log Porosity	4% – 12%
● Pressure (psi/foot)	Normal ~0.42
● Water Saturation	15% – 50%
● Gas-in-place (bcfe/section)	30 – 60
● Anticipated Recovery Factor	35% – 40%
● Average EUR/Horizontal Well (bcfe)	2.2

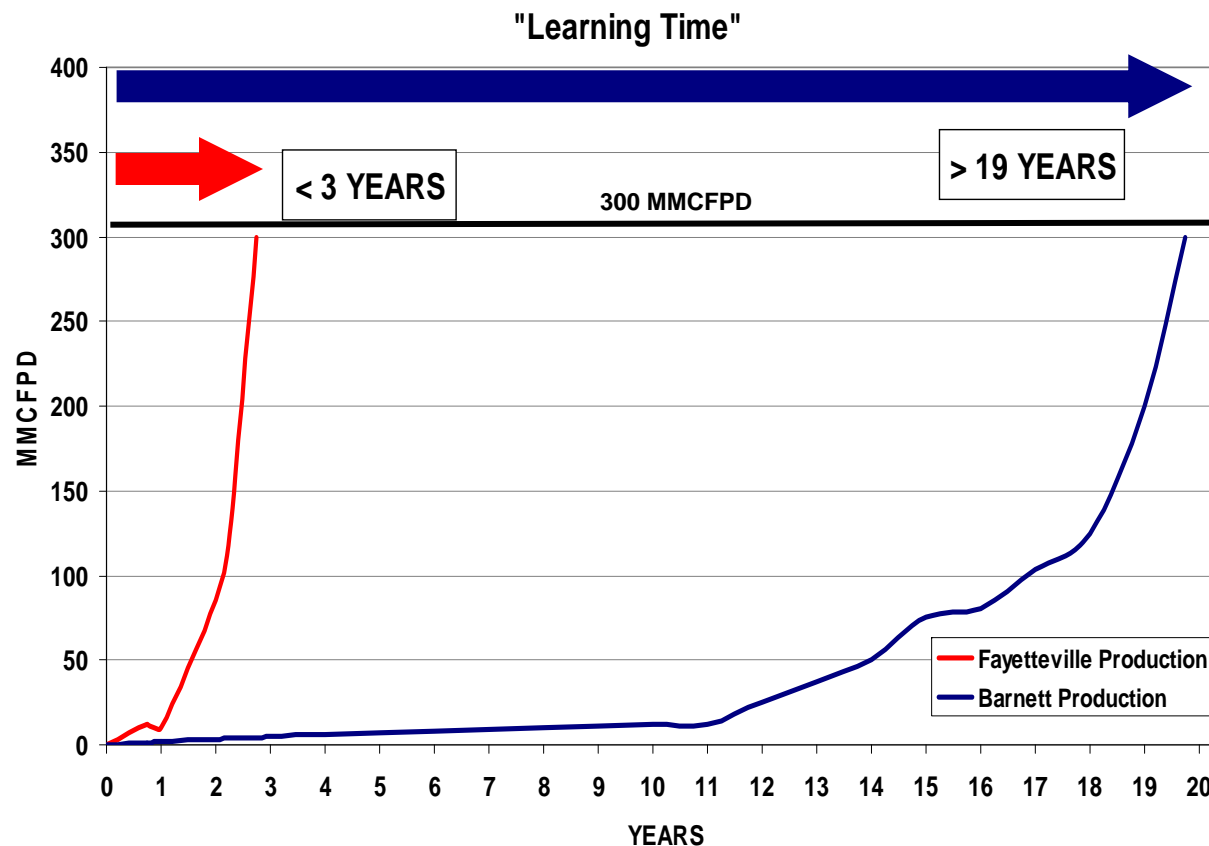


# Fayetteville Shale – Advantages



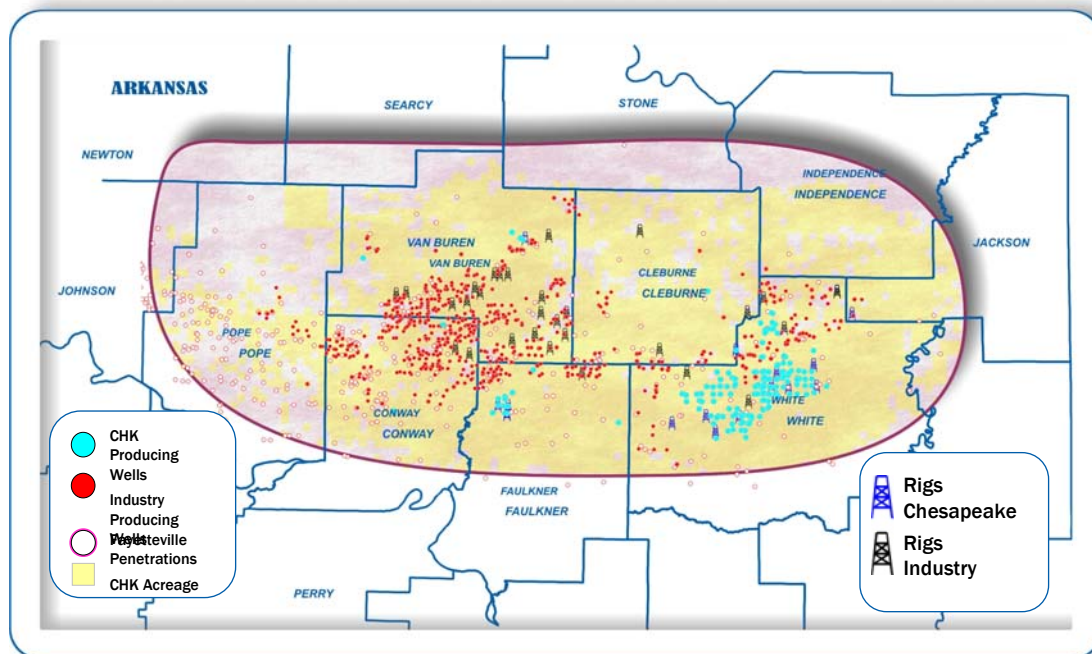
- **Advantages inherent to the Fayetteville Shale play**
  - Good permeability relative to other shale plays
  - Low acreage costs, high NRIs, mostly rural areas
  - Significantly improved well EUR's since 2006
  - Drilling and completion costs improvement and vendor competition
  - Organic rich, low-clay content, high silica percentage
  - Attractive finding costs
- **CHK advantages**
  - Experienced technical staff on all fronts
  - Knowledge of other shale plays, CRTC
  - Nomac rig fleet and ability to HBP leasehold faster
  - 75/25 joint venture with BP
  - Significant infrastructure/natural gas capacity
  - Dominant leasehold position with excellent term
- **Challenges**
  - Complex structure compared to Barnett/Haynesville
  - Rough topography in north core area
  - Minor areas with NFS, AFGC regulations

# Fayetteville & Barnett Production Growth Comparison



From: Tudor, Pickering, Holt & Co. Securities, Inc.

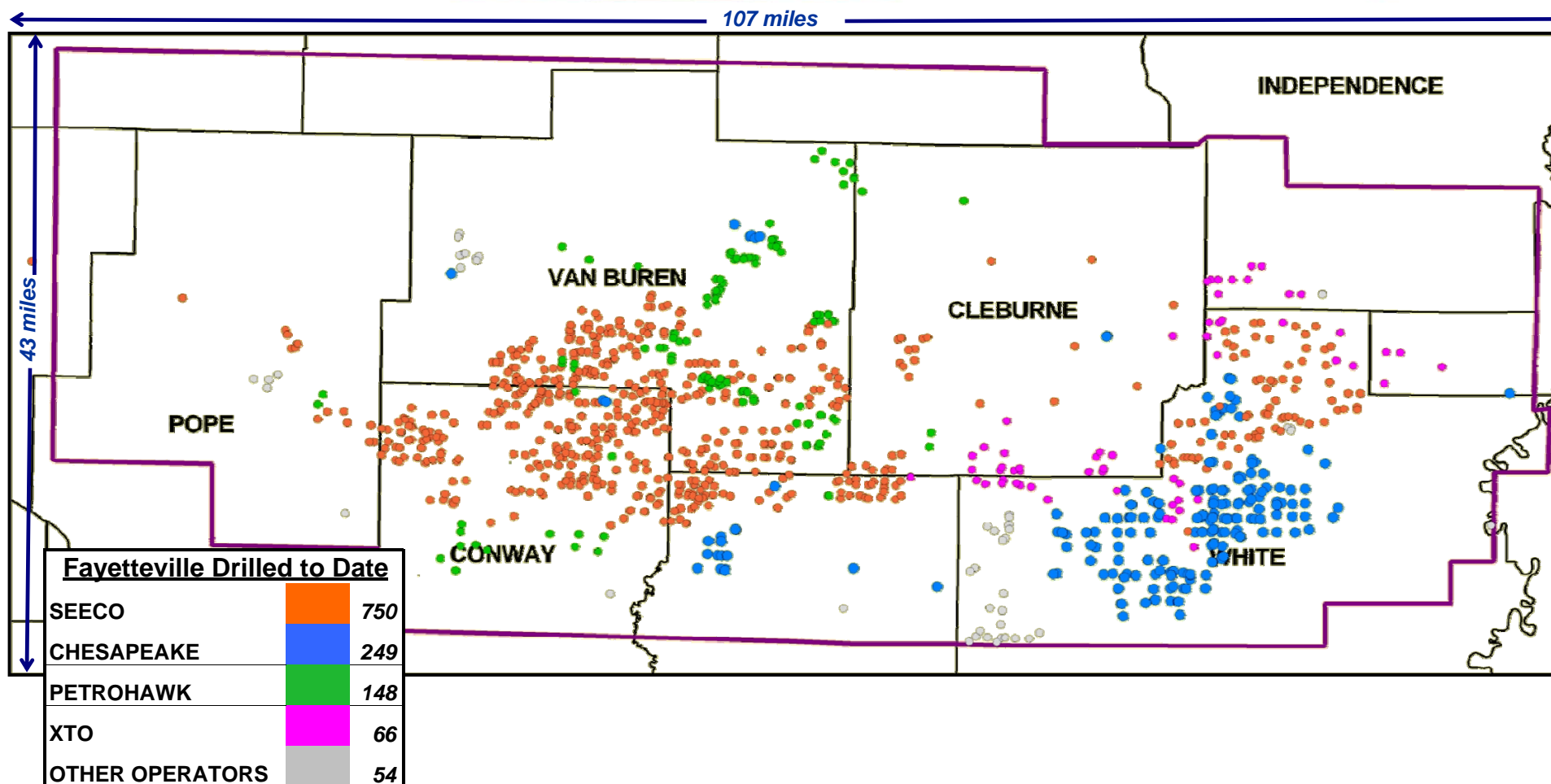
# Fayetteville Shale – Leasehold Position



- CHK currently owns 415,000 net acres of leasehold in the Core area of the play
- CHK is adding ~9,000 net acres of leasehold per quarter
  - 200 brokerage personnel working for CHK
  - CHK operated sections increasing an average of 10+ sections/month
- Should finish leasing campaign by 2010 with 475,000 to 500,000 Core net acres of leasehold in the play
  - CHK likely to operate 850 to 1,000 sections



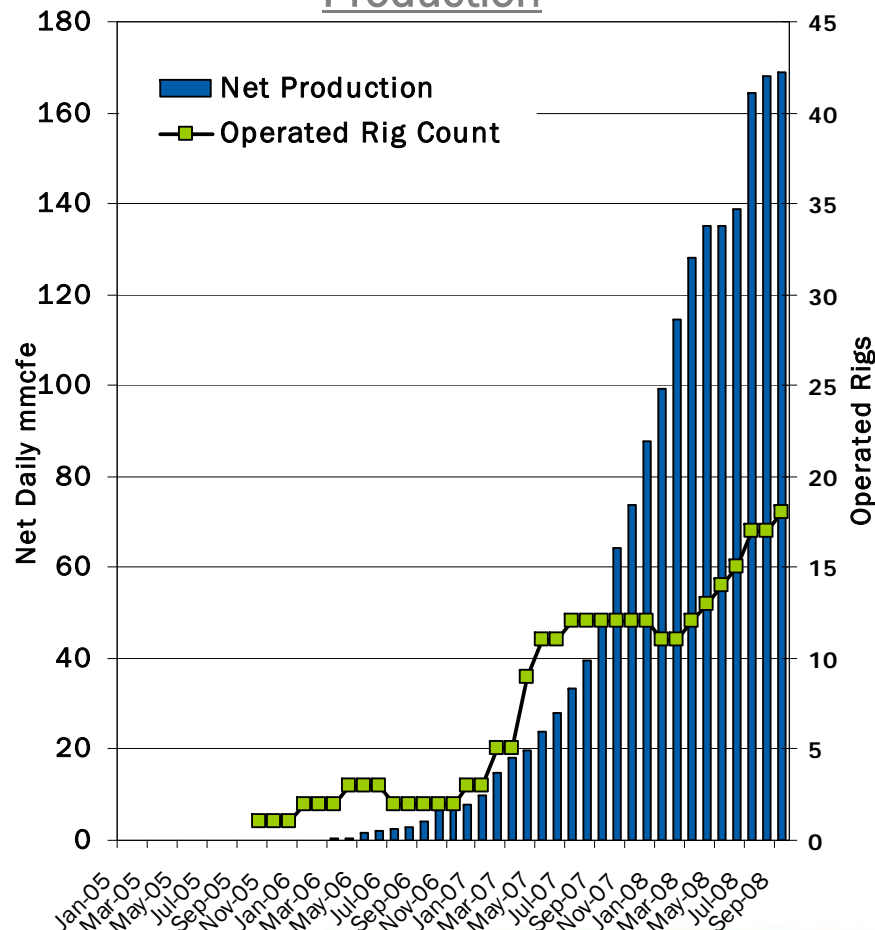
# Fayetteville Shale – Active Operators Approaching 1,300 wells to date



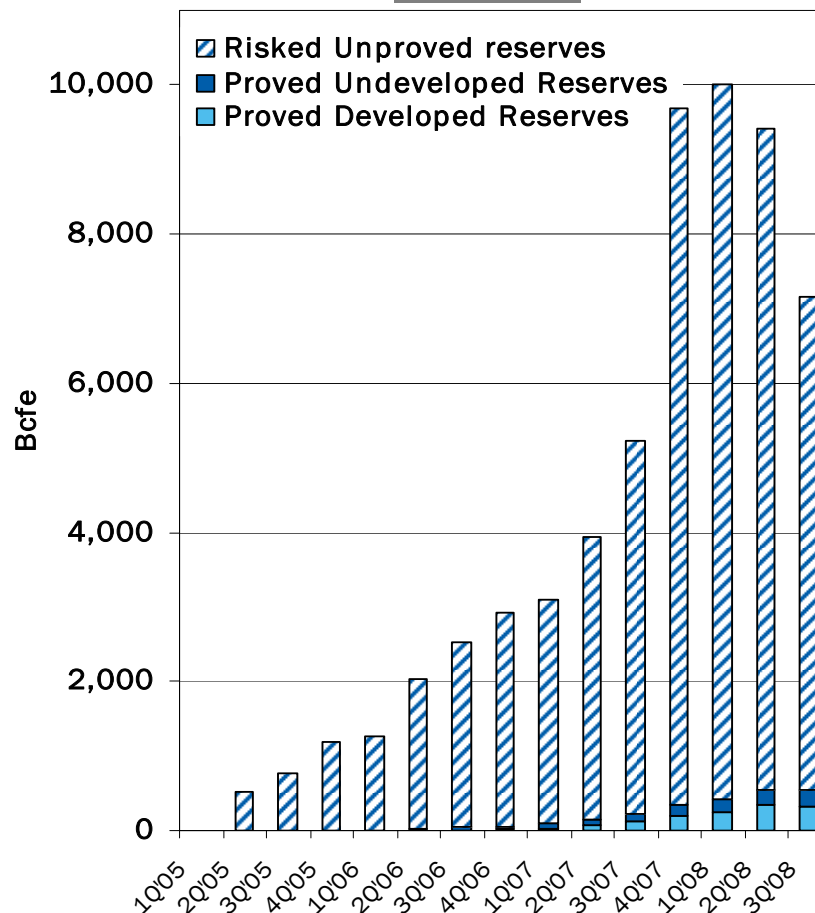
# Fayetteville Shale – Production & Reserves Growth



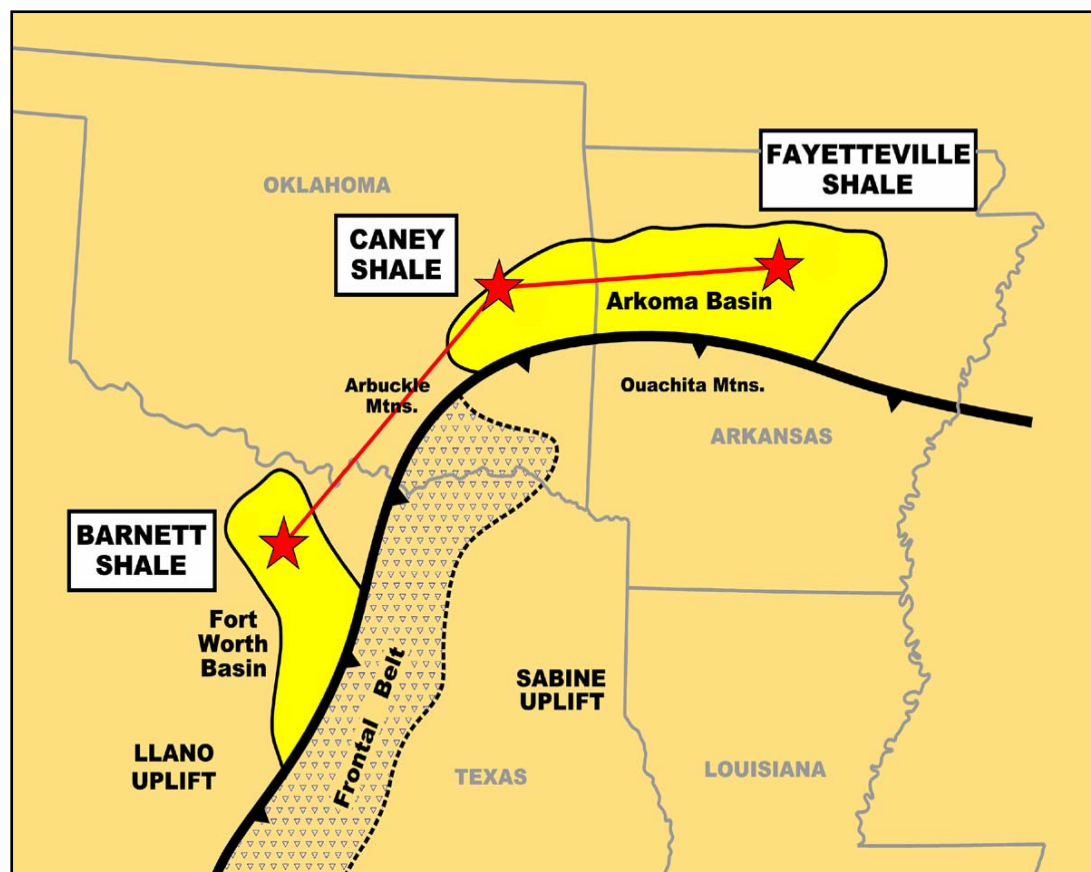
Production



Reserves



# Fayetteville Shale – Geologic Discussion

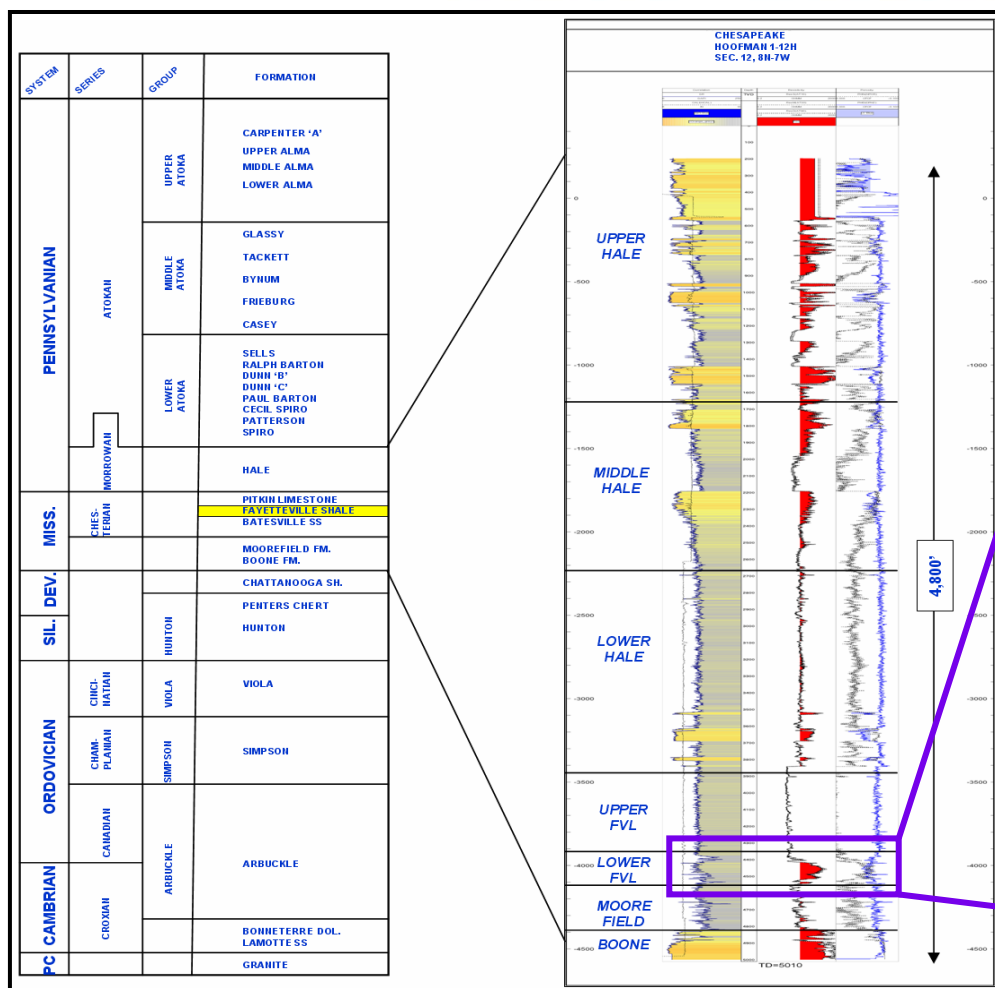


- Unconventional resource play located in the eastern Arkoma Basin
- The Fayetteville Shale is age equivalent to the Caney Shale in Oklahoma and the Barnett Shale in the Fort Worth Basin of north-central Texas.
- Knowledge leveraged from the Barnett play facilitated coming into the Fayetteville relatively high on the learning curve
  - Geological understanding
  - Drilling
  - Completion
- Additional potential
  - Hale (Morrowan) sandstones
  - Lower Moorefield shale resource play
  - Lower Paleozoic structural traps

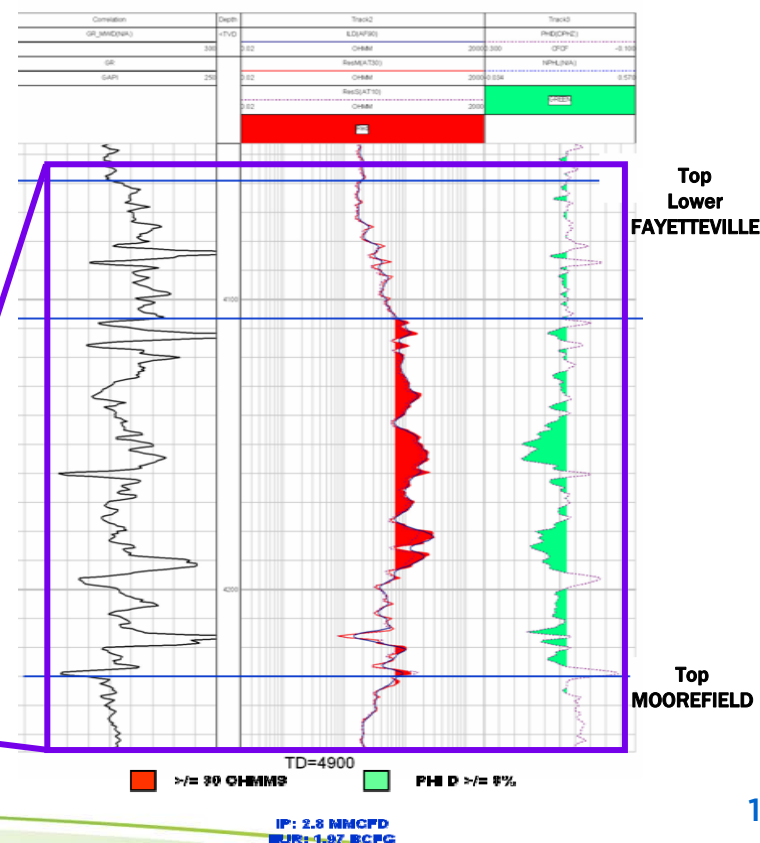


# Fayetteville Shale – Eastern Arkoma

## Stratigraphic Section



TYPE LOG  
CHESAPEAKE WYATT 1-6H  
SEC. 6, 8N – 7W  
WHITE CO., AR



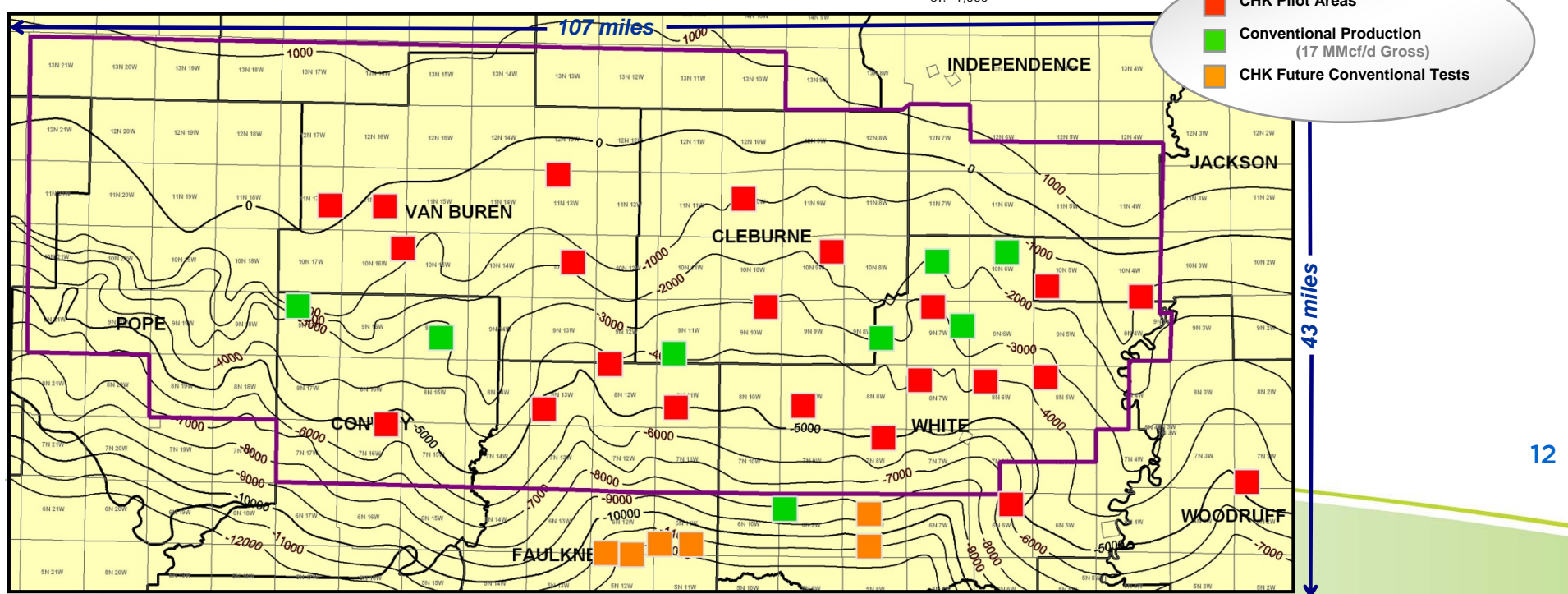
# Fayetteville Shale – Chesapeake Pilot Tests



- Fayetteville pilot areas assigned mainly to test various log characteristics, thicknesses and depths
  - To delineate extents of the play
  - To better understand value in areas for leasing purposes
- Moorefield-secondary shale target underlying Fayetteville
- Conventional targets
  - Orr and Hale formations
  - Thrusted and in-situ Orr and Hale
  - Batesville, Boone, Hunton

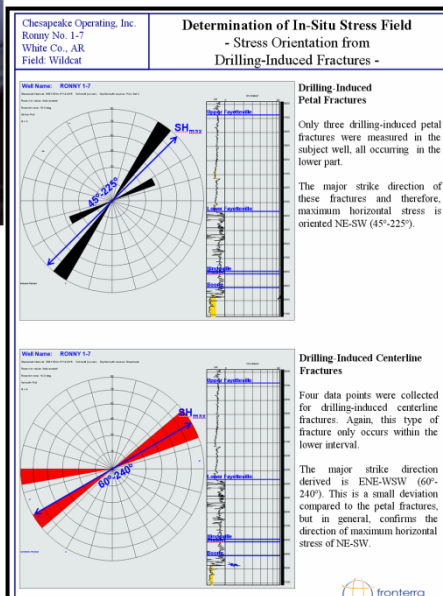
- TVD depths to top of lower Fayetteville range from 1,200' to 7,500' across the current productive area
- Typical depths across current core play area 4,000' to 5,500' TVD
- Typical lateral length is ~4,000' vertical section

Lower Fayetteville Structure  
CI: 1,000'





# Fayetteville Shale – Understanding the Rocks and Improving Results



## CHK Reservoir Technology Center (CRTC)

- Core and petrophysics studies identify best pay zones
- Guides geo-steering efforts, development plans and improve completion methods



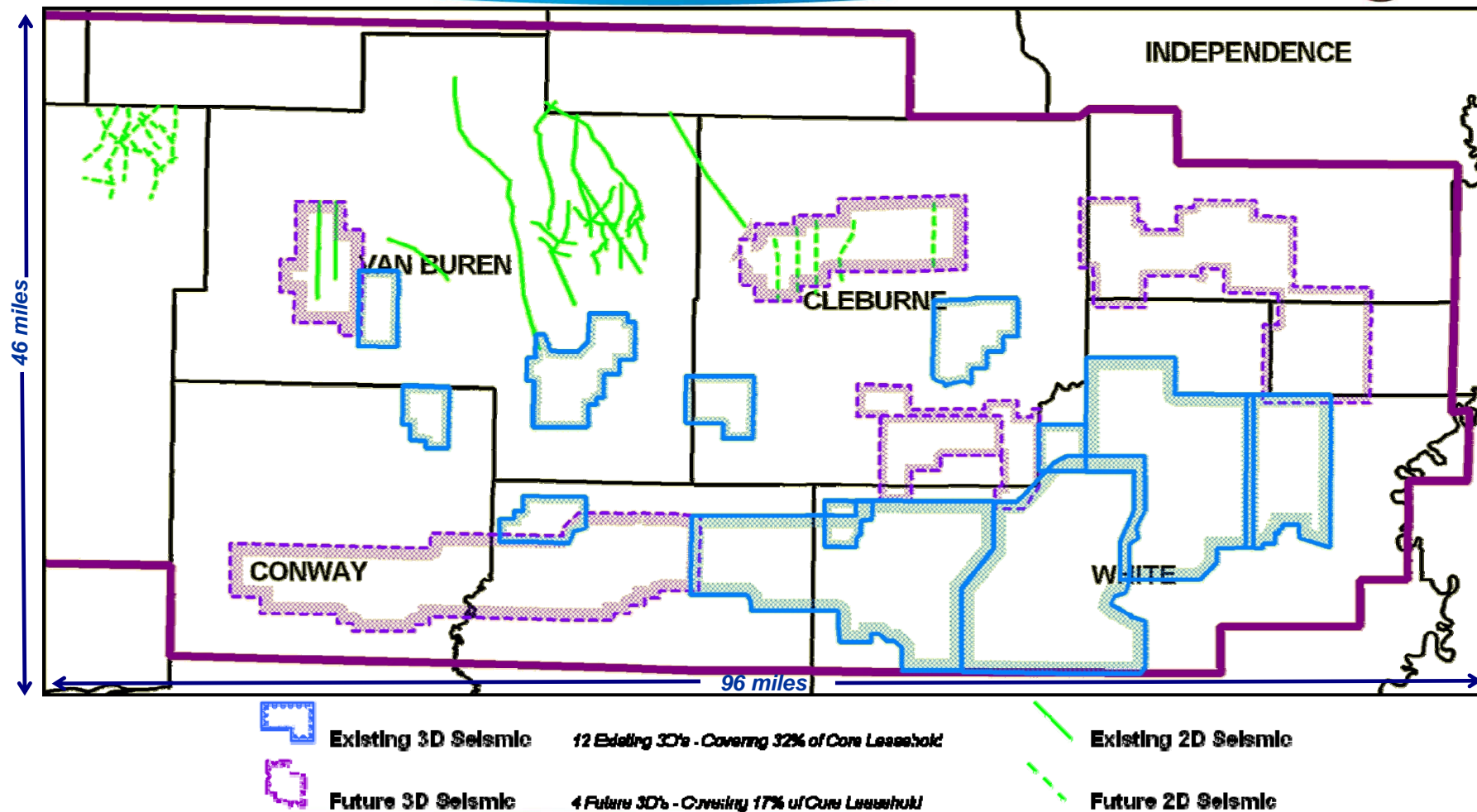
# Fayetteville Shale – 3-D Seismic Surveys



14

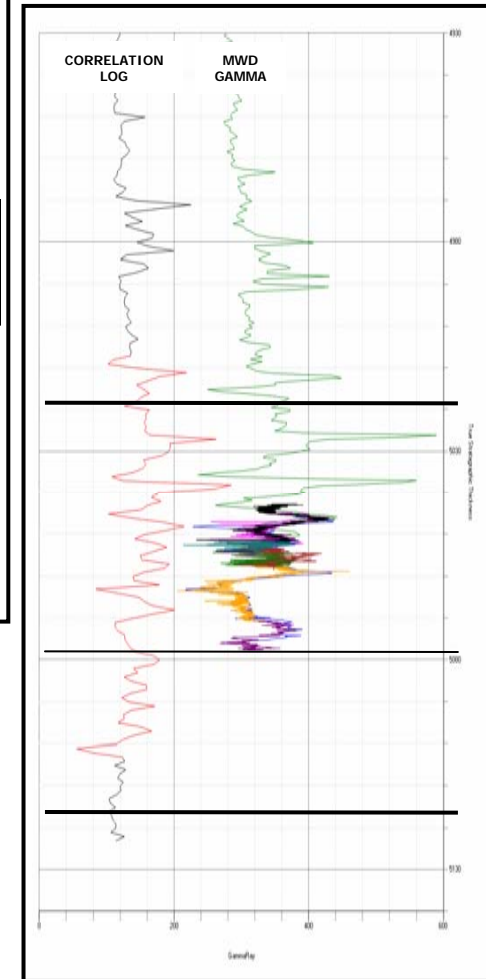
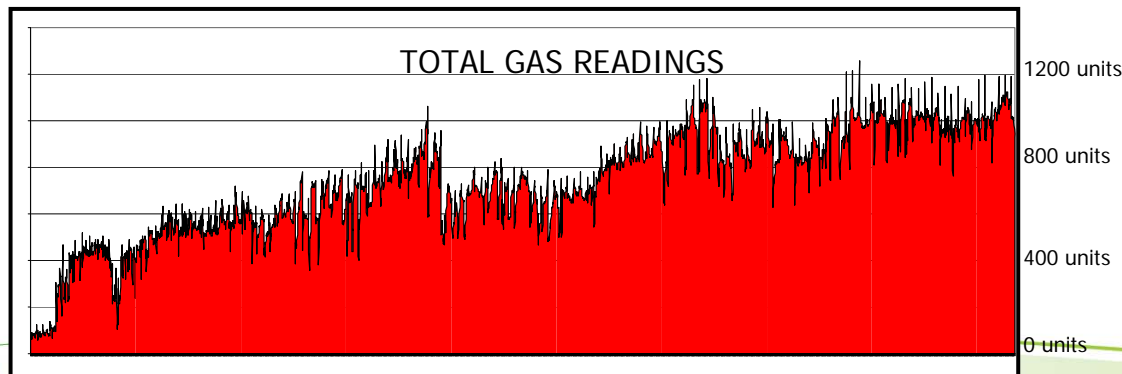
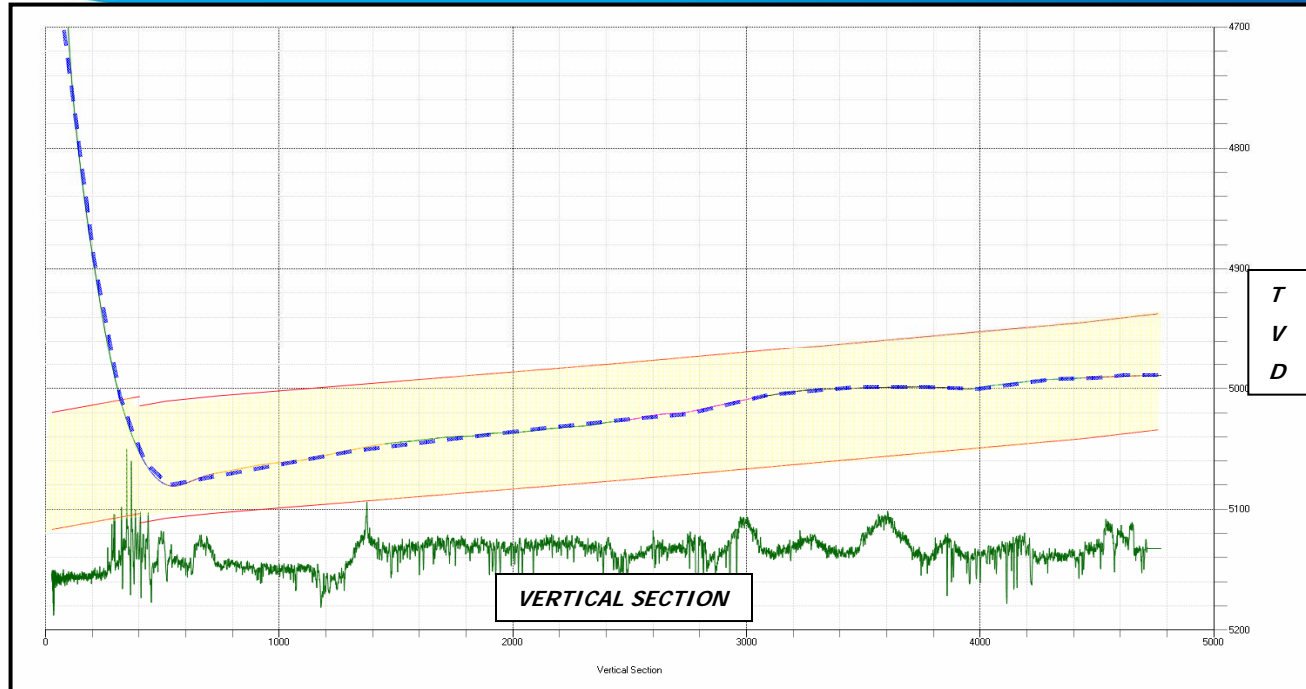


# Fayetteville Shale – Arkansas Geophysical Activity



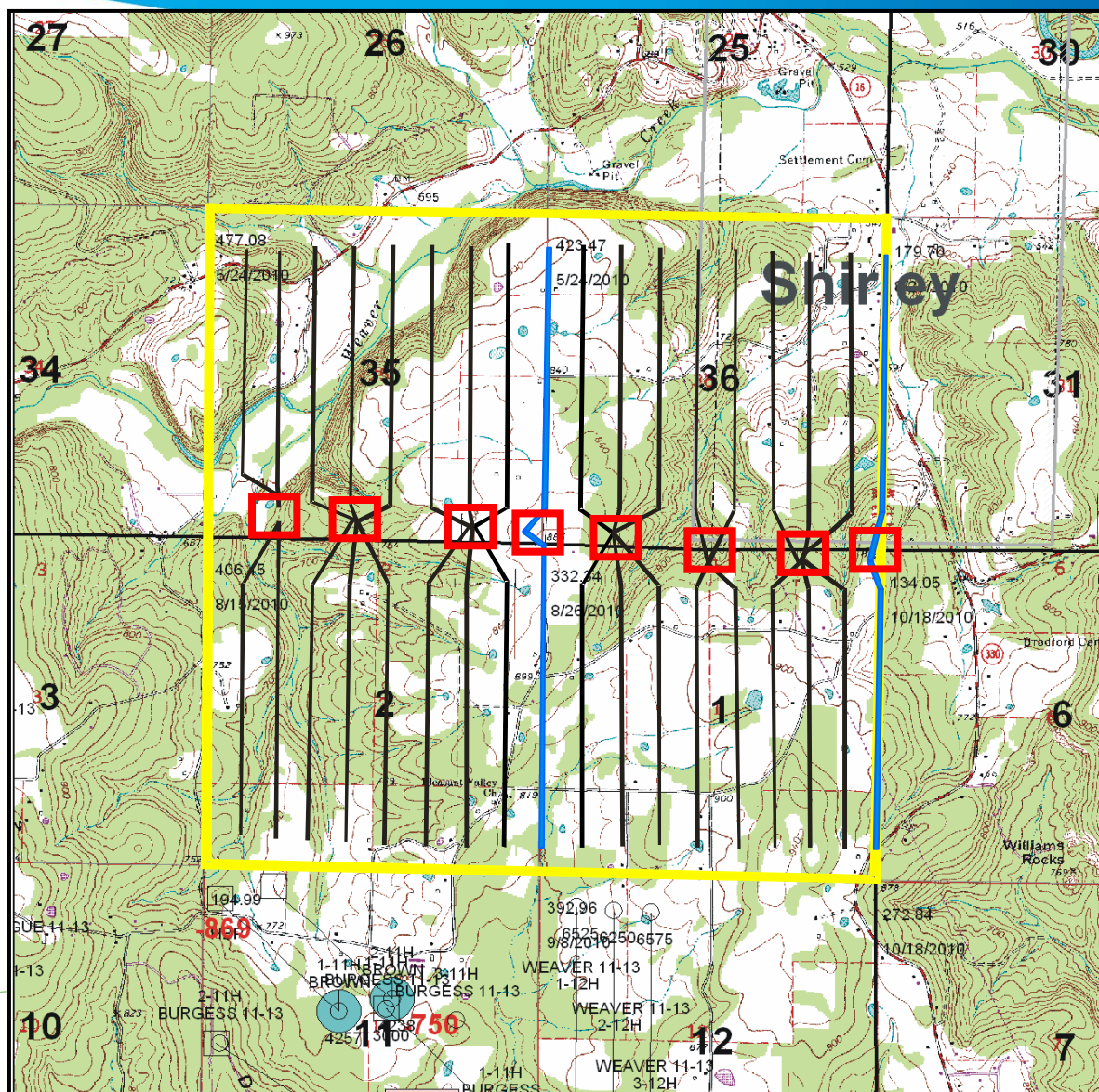
**49% of Core Leasehold will have 3D Seismic**

# Fayetteville Shale – Geo Steering - Lateral Targets



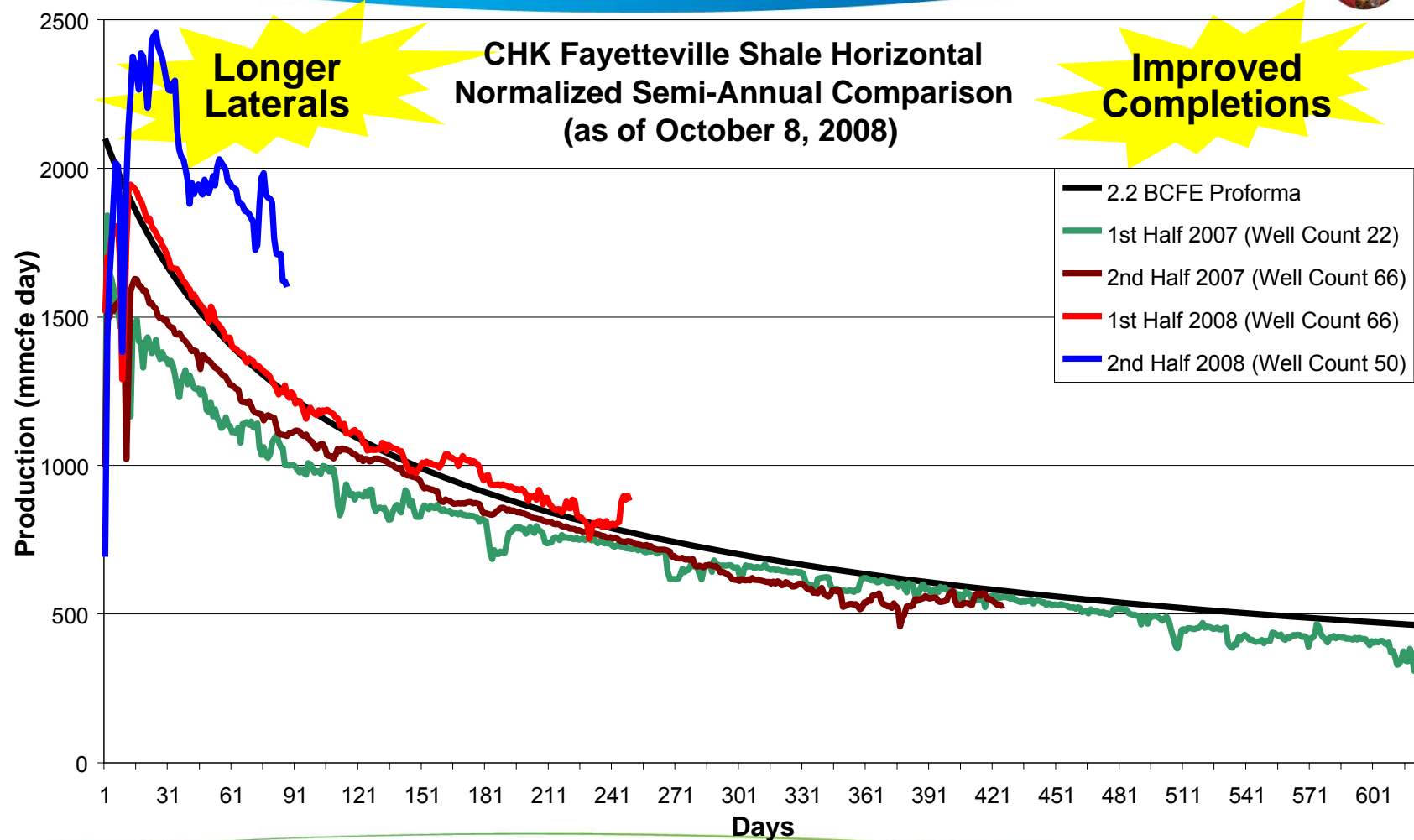


# Fayetteville Shale – Field Development

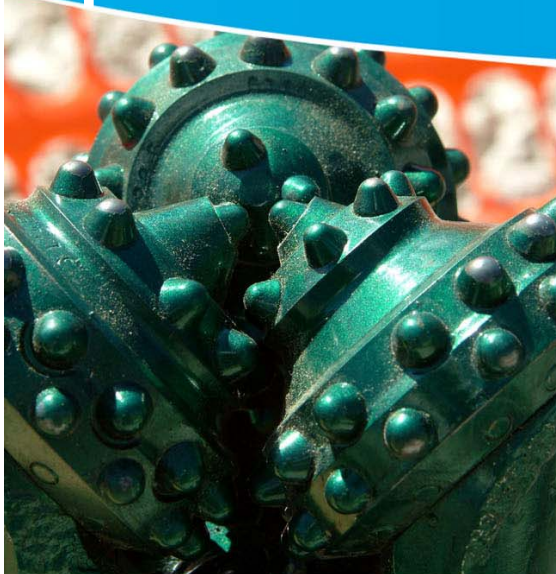


- 9 total wells per section
- 8 interior wells per section
- 1 boundary well per section
- 560' between wells
- Section line boundary wells approved by the AOGC
- 2- 6 well pad drilling (3 acres)

# Fayetteville Shale – Production Improvement Over Time



# Fayetteville Shale – Operations Excellence



## ● CHK operations have steadily improved over time

- CHK was the first operator to determine better economics were associated with:
  - Longer laterals
  - Slick water fracs
  - Improved geologic targeting
- Completion optimization
  - Increased pounds of sand per foot of perforated lateral and treatment rate
  - Decreased the stage spacing, cluster spacing and stage size
  - Optimized proppant size, frac fluids composition and perforation charge size
  - Scale advantage, currently perform >150 fracs/month

Number of Fracture Stimulations													
	Months												
Year	1	2	3	4	5	6	7	8	9	10	11	12	Total
2006			2	4	3	2	4	13	8	5	5	15	61
2007	19	11	17	15	24	39	50	48	50	50	59	63	445
*2008	99	61	66	71	92	83	105	154	154	154	154	154	1347

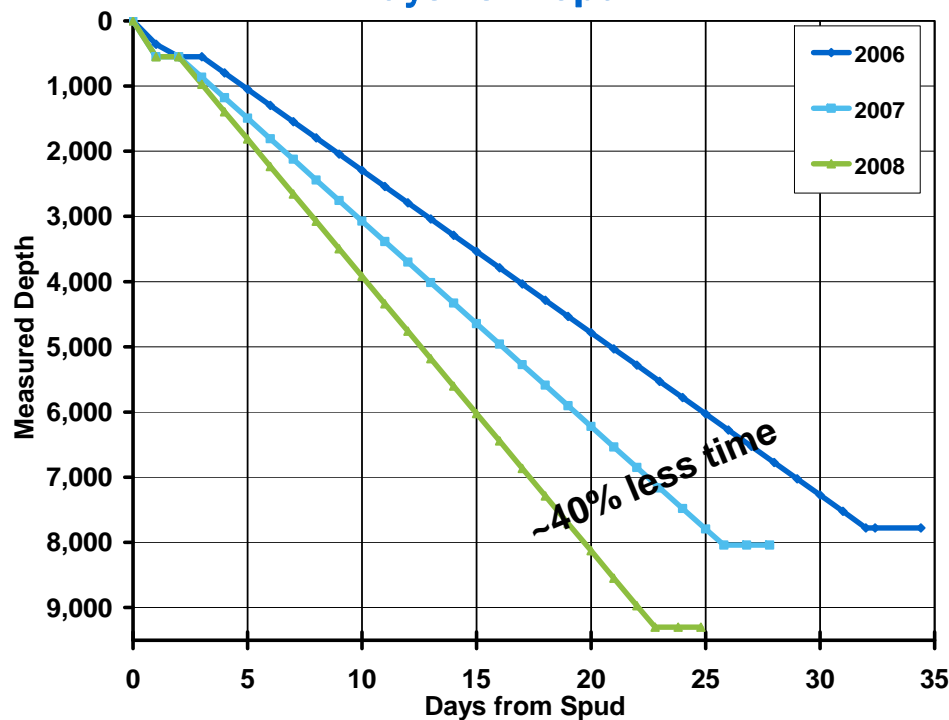
\*Projected Through Q4 '08



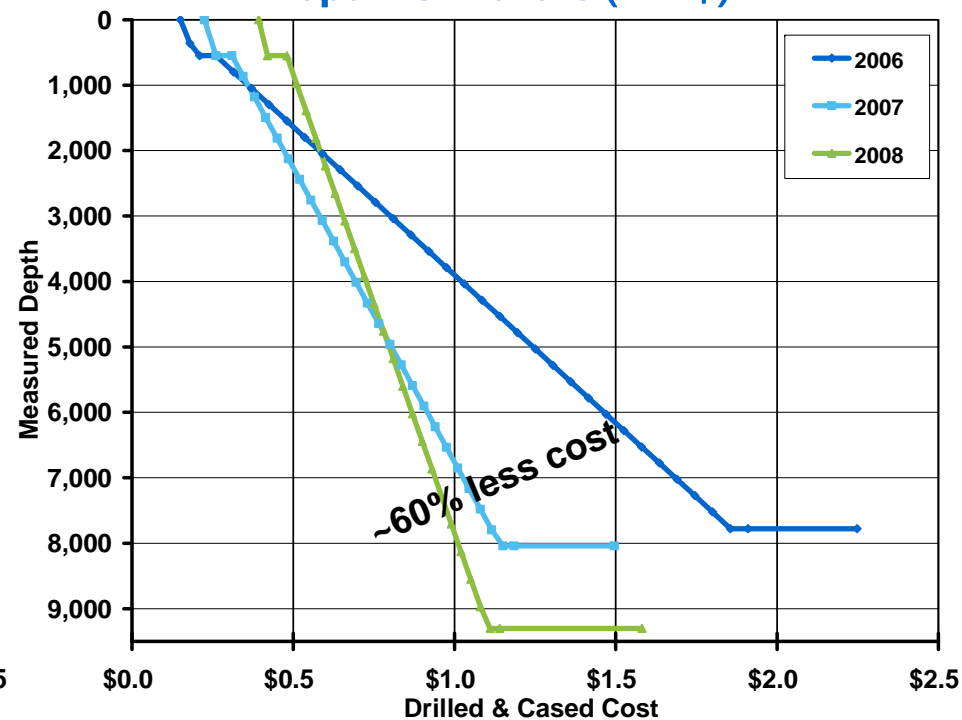
# Fayetteville Shale – Increasing Drilling Efficiencies



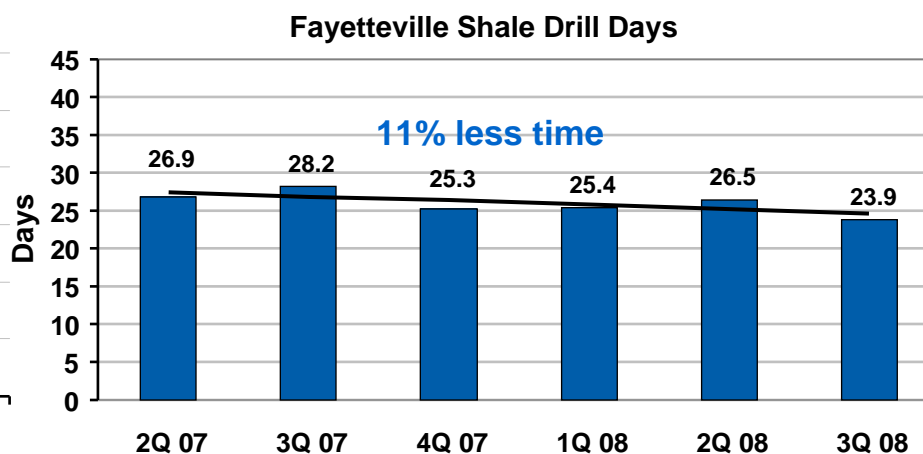
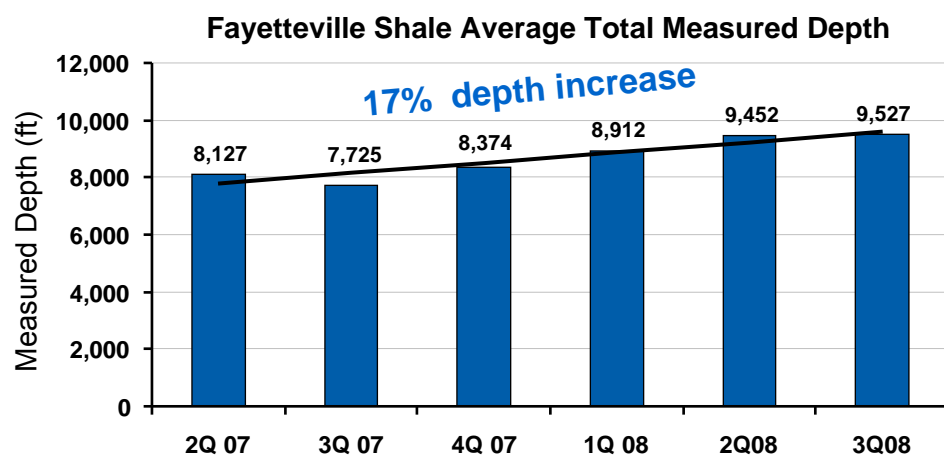
Days vs. Depth



Depth vs. Dollars (MM\$)



# Fayetteville Shale – Drilling Improvements



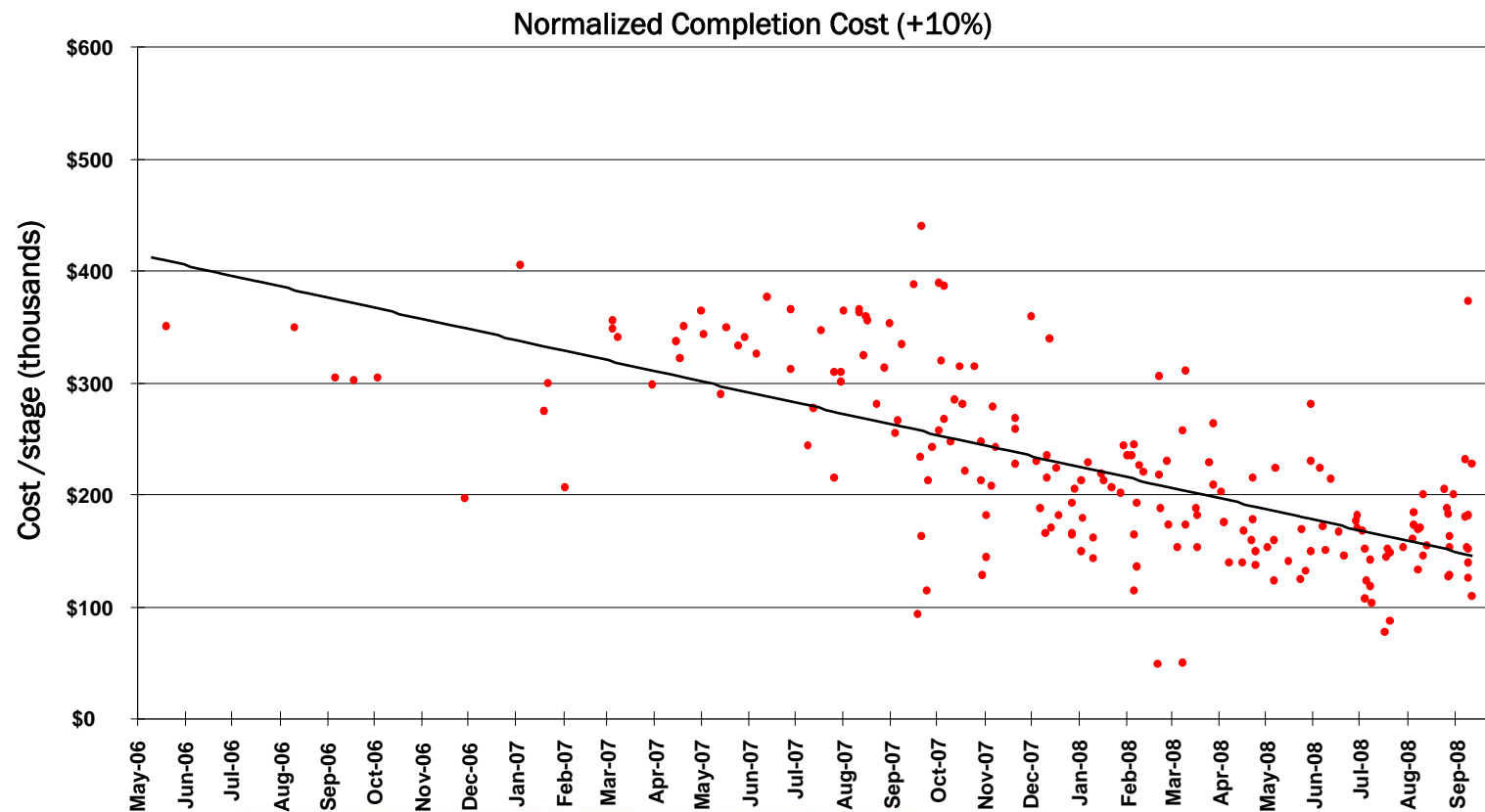
- Depth per well increasing with longer laterals and play extensions
- Drilling days decreasing, despite longer laterals

# Fayetteville Shale – Completion, Cost/stage



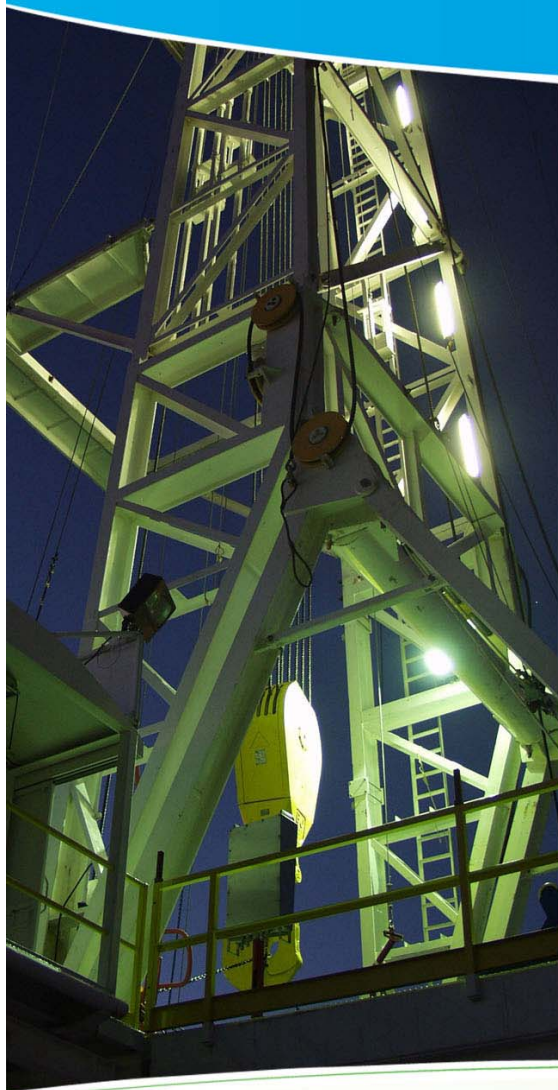
## ● Frac Services – Pricing

- Increasing competition with new providers in the market
- Now have 7 primary frac vendors



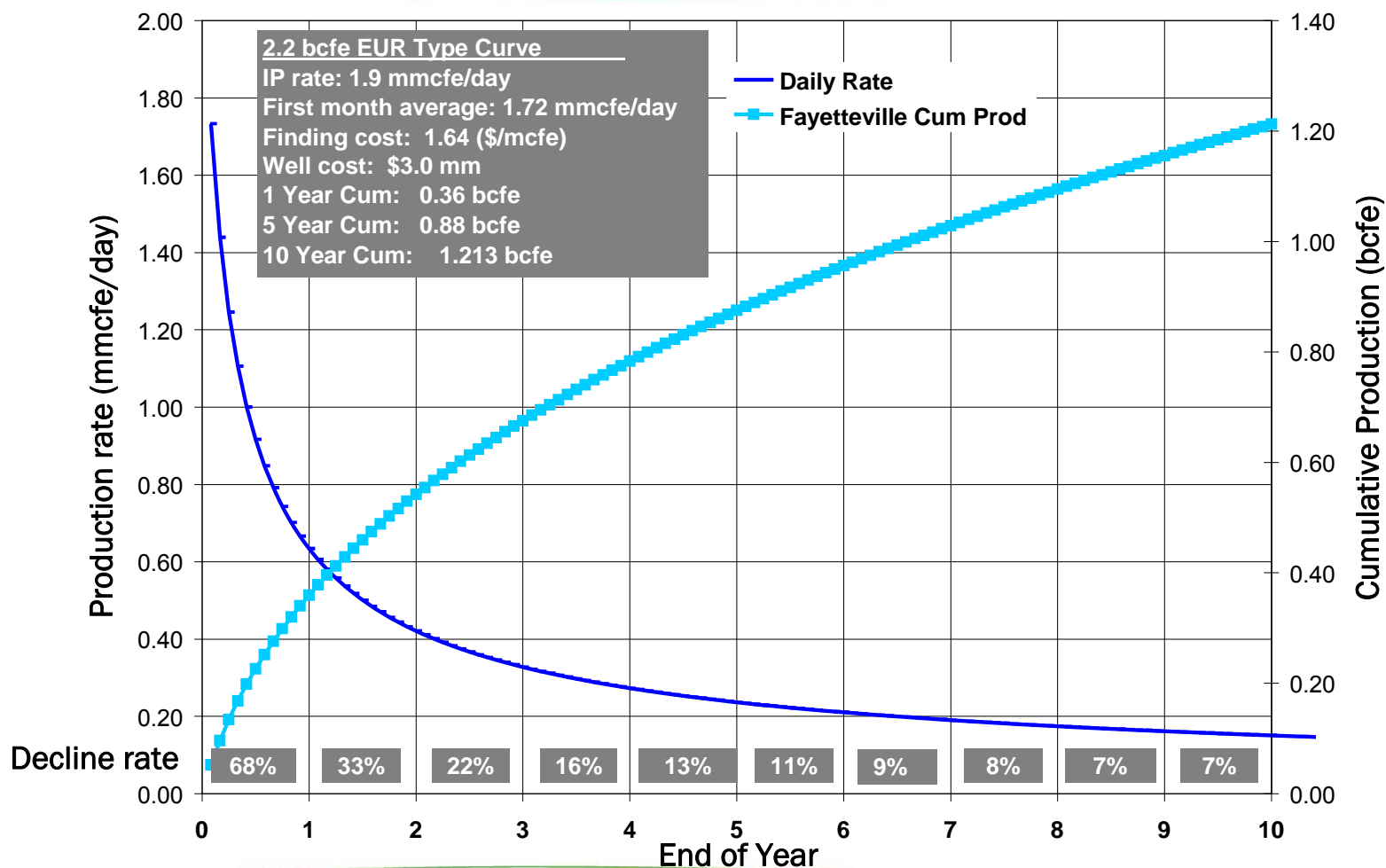


# Fayetteville Shale – Development Plan

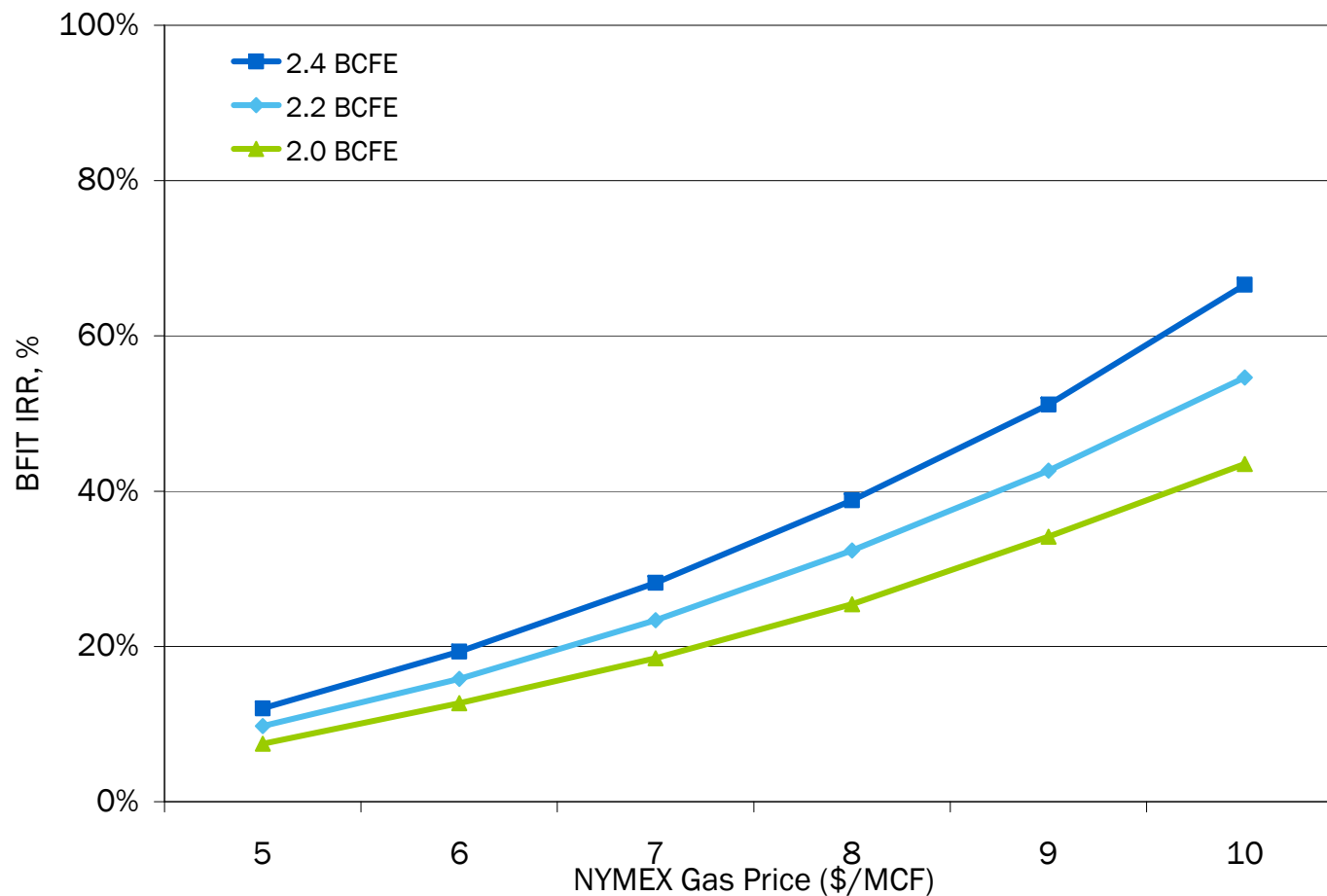


- CHK net leasehold acres of 415,000
- 80-acre spacing
- 3,700 potential net risked wells to be drilled
- Average IP rate: 1.9 mmcfe/day
- First month average production of 1.7 mmcfe/day
- Average EUR of 2.2 bcfe/well
- Drilling and completion costs of \$3.0 million per well
  - Drillbit F&D cost of \$1.64 per mcfe
  - 4,000' average horizontal lateral length
  - 8 - 10 stage fracture stimulation stages
- Days to drill wells: 20 - 30 days
- Total unrisked unproved reserve potential: ~9 tcf
- Assumed risk factor: 25%
- Total risked unproved reserve potential: ~6.8 tcf
- Average operated rig count per year: ~20 rigs

# Fayetteville Shale – Pro Forma Horizontal Well Profile 2.2 bcfe well

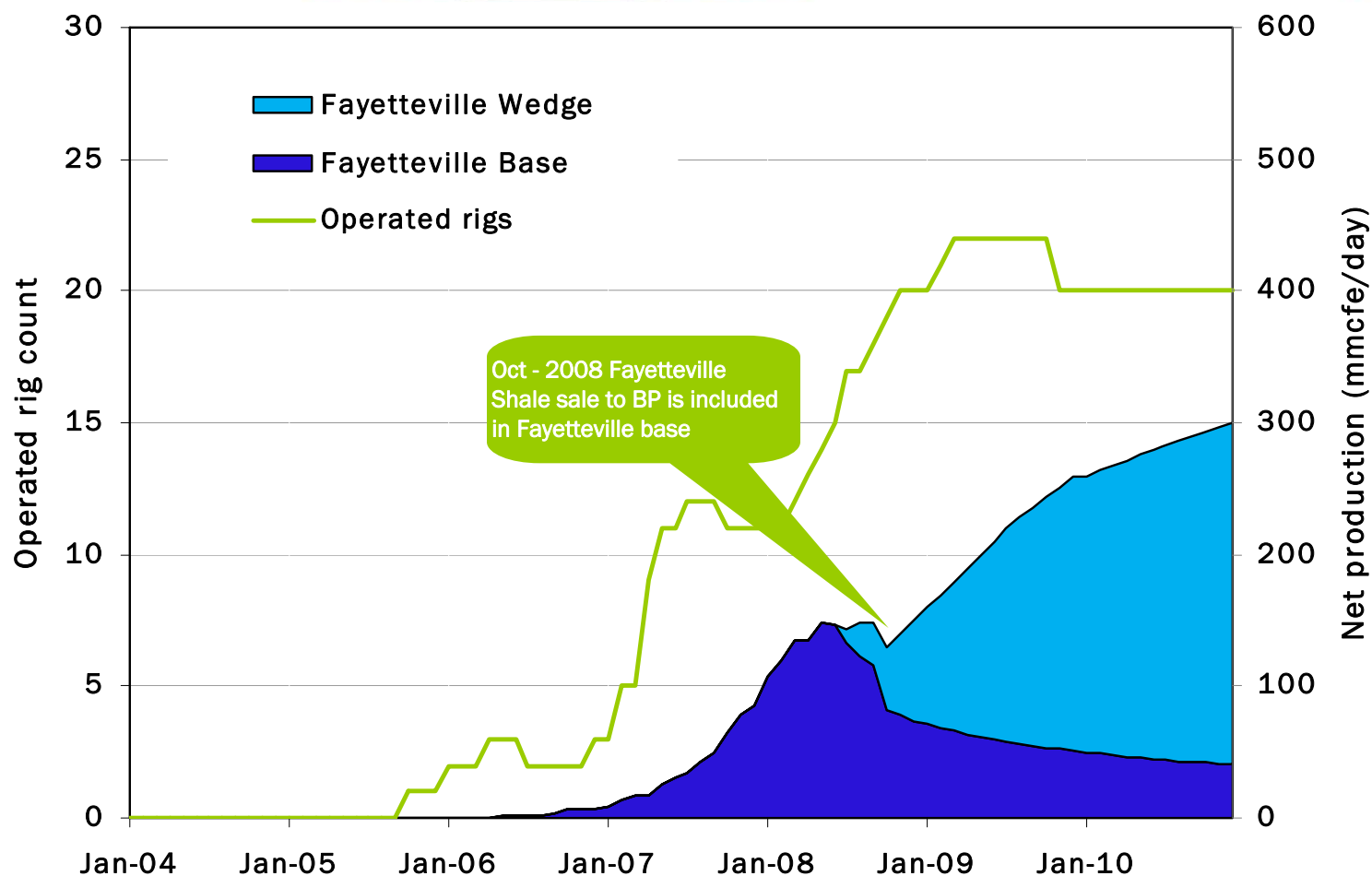


# Fayetteville Shale – Rate of Return Profile

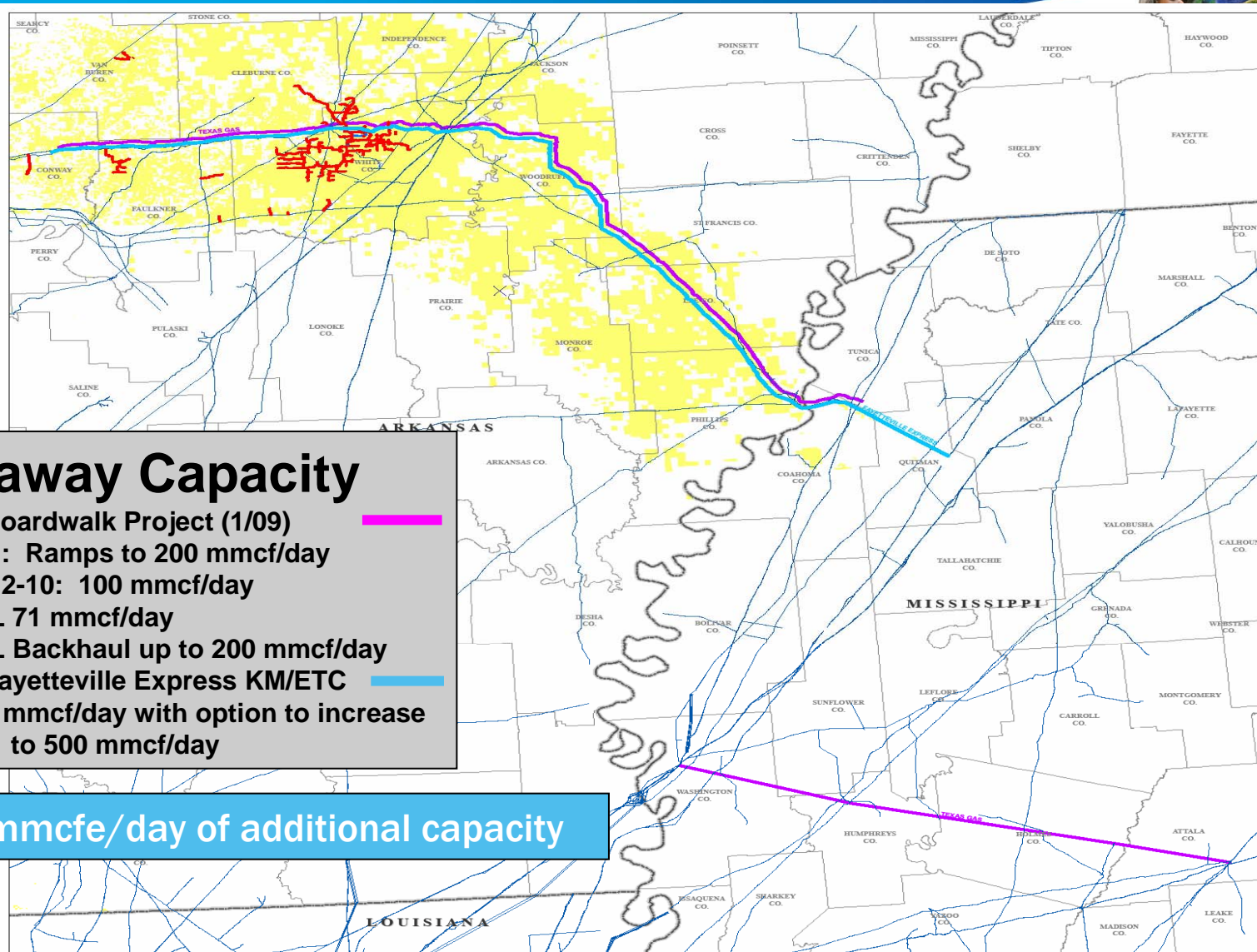




# Fayetteville Shale – Growth Profile



# Fayetteville Shale – Long Haul Pipelines and Projects

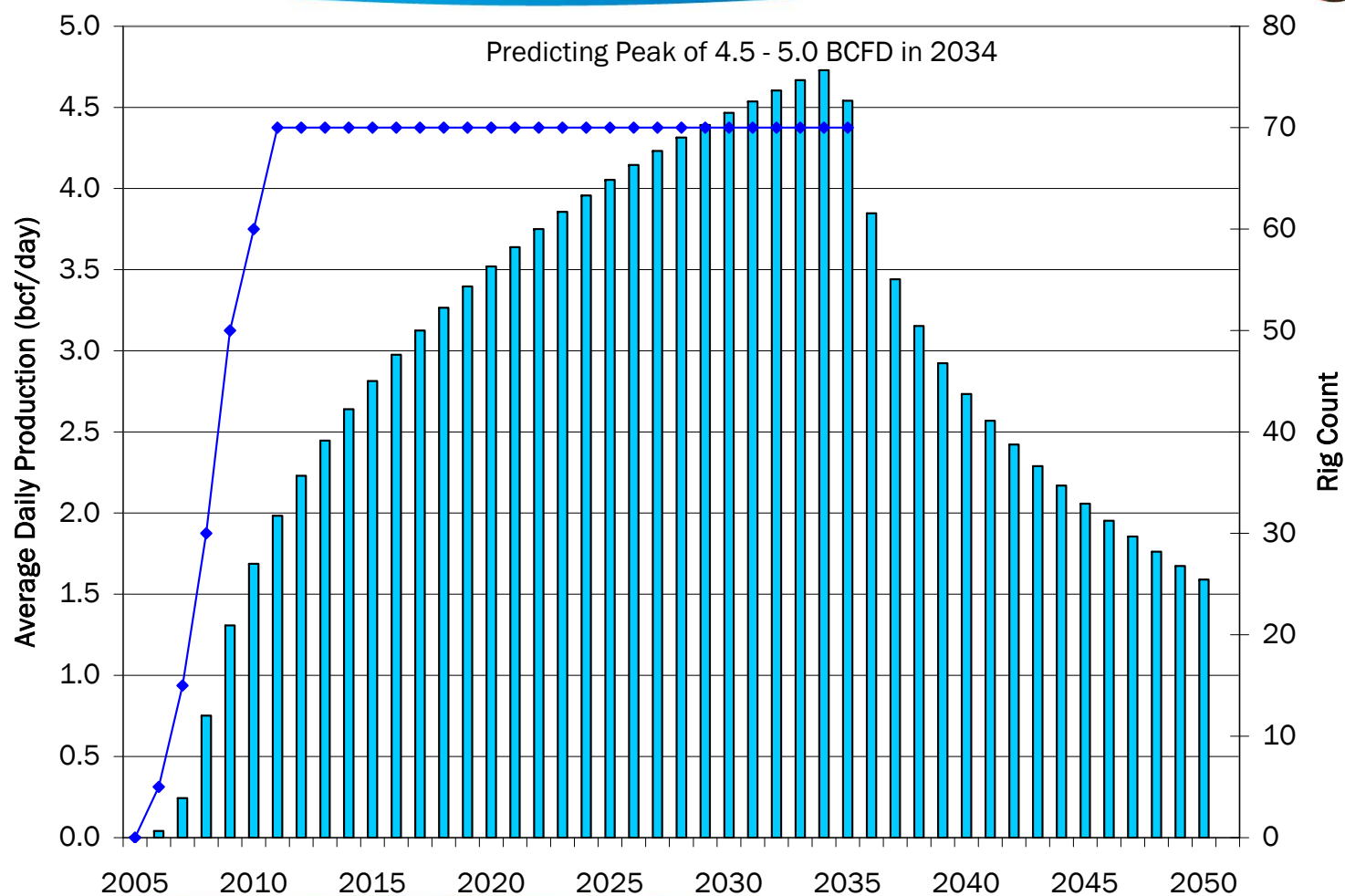


## Takeaway Capacity

- 1) 36" Boardwalk Project (1/09) —  
Yr 1: Ramps to 200 mmcf/day  
Yrs 2-10: 100 mmcf/day
- 2) NGPL 71 mmcf/day
- 3) NGPL Backhaul up to 200 mmcf/day
- 4) 42" Fayetteville Express KM/ETC —  
375 mmcf/day with option to increase to 500 mmcf/day

**+671 mmcf/day of additional capacity**

# When Will the Fayetteville Shale Peak?







# Marcellus Shale Overview

Hank DeWitt, VP Geosciences – Eastern Division



# Marcellus Shale – Overview



- CHK is a top-3 producer and the largest leasehold owner in the Marcellus Shale play
- Potential 31 million acre play and will be a foundational asset for CHK & the industry for years to come
- Currently operating ~3 rigs to further develop ~1.8 million net acres of leasehold
- Current net production of ~15 mmcfe/day is up 300% YTD
  - Anticipate reaching ~20 mmcfe/day by YE'08, ~60 mmcfe by YE'09 and ~130 mmcfe/day by YE'10
- ~5,500 potential net risked wells in inventory to develop 17 tcf of risked unproved reserves
  - ~69 tcf of unrisked
- Currently negotiating with multiple international companies to purchase ~25% interest in the play; anticipate closing by YE'08



# Marcellus Shale – Background



- Re-entered 6 well bores to test Marcellus Shale beginning in July 2006
- Initial vertical Marcellus Shale test well spud March 2007
- CHK has drilled 19 vertical Marcellus Shale wells – 12 on-line, 4 waiting on completion, 2 waiting on pipeline, 1 waiting on horizontal rig
- Cored 6 vertical test wells through Marcellus Shale (analyzed 11 total Marcellus Shale cores)
- CHK's initial horizontal well spud August 2007
- CHK has drilled 6 horizontal wells – all on-line and producing
- Two 2Q'08 horizontal Marcellus Shale wells had initial gross production rates of 7 mmcfe/day and combined estimated EUR of ~11 bcfe
- 12 vertical and re-entered Marcellus Shale wells on-line – combined vertical production ~5 mmcfe/day
- 6 horizontal Marcellus Shale wells on-line – combined production ~10 mmcfe/day



# Marcellus Shale – Characteristics



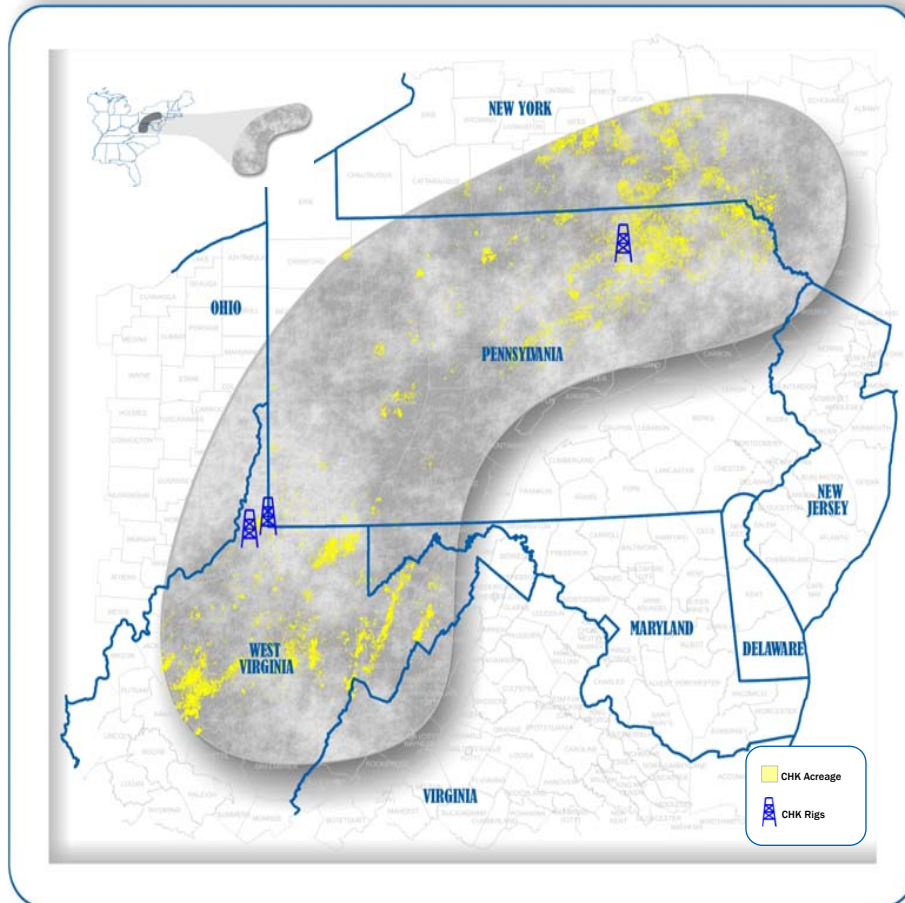
● Depth TVD	1,500' – 8,000'
● Thickness	50' – 300'
● Total Organic Content (TOC)	5.3% – 7.8%
● Thermal Maturity (Vitrinite Reflectance)	0.6% – 3.0%
● Average Log Porosity	5.5% – 7.5%
● Pressure (psi/foot)	0.42 – 0.7
● Water Saturation	12% – 35%
● Gas-in-place (bcfe/section)	30 – 150
● Anticipated Recovery Factor (%)	~30%
● Average EUR/Horizontal Well (bcfe)	3.75

# Marcellus Shale – Advantages



- **Advantages inherent to the Marcellus Shale play**
  - Close to U.S. population centers and best natural gas markets
  - Overpressured reservoir
  - Geologically stable area - structurally uncomplicated
  - Good water supply
  - Largely located in rural areas
- **CHK advantages**
  - Largest leasehold position in the play
  - Ability to obtain rigs to convert leasehold to HBP quickly
  - Experience from our other shale plays brought to bear
  - CRTC (Chesapeake Reservoir Technology Center)
  - Over 100 years of operating experience in the area through CNR legacy

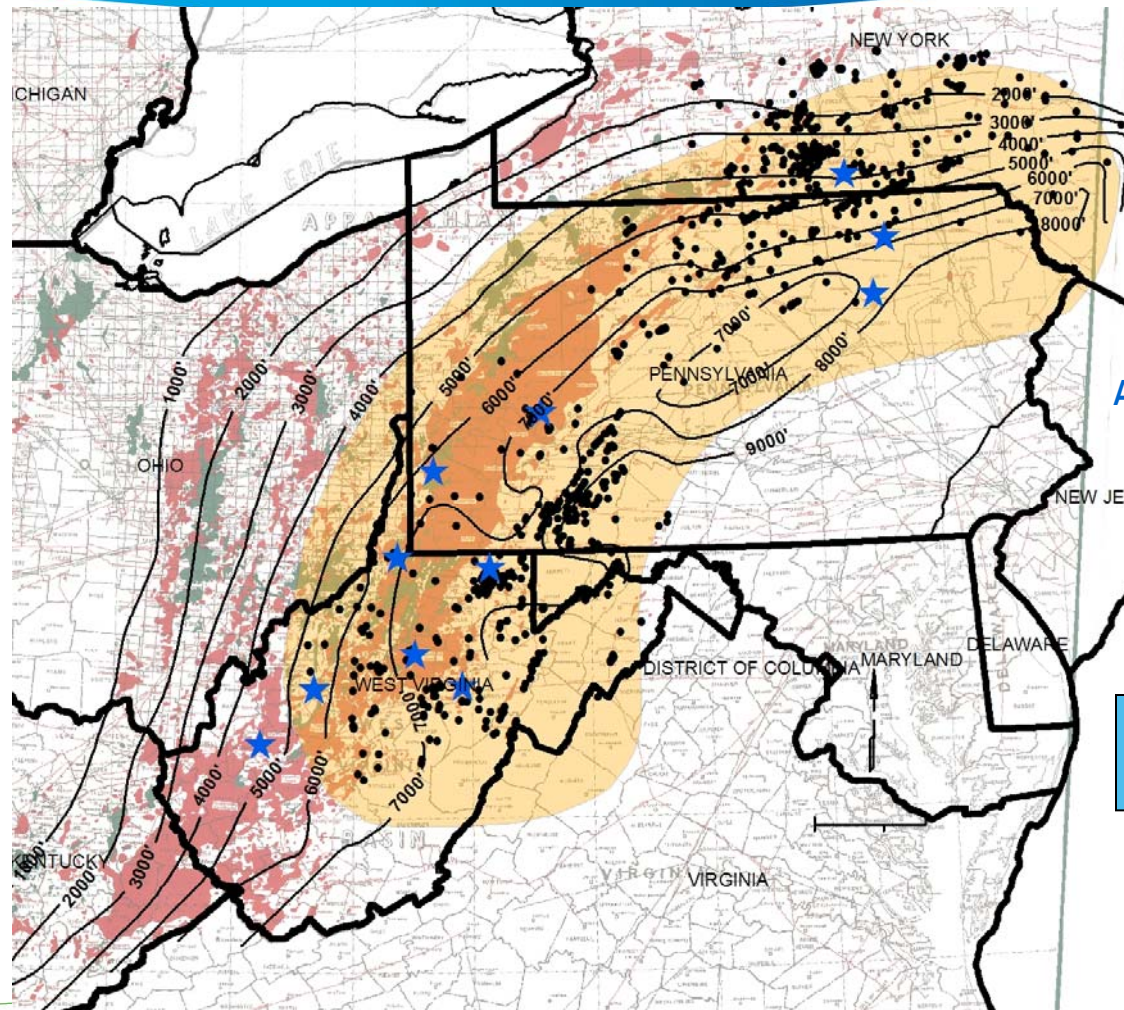
# Marcellus Shale – Leasehold Position



- CHK currently owns 1.8 million net acres of leasehold in the Marcellus Shale
- CHK is acquiring more than ~25,000 net acres of leasehold per quarter
- Should finish leasing campaign by 2010 with ~2.0 million acres of leasehold in the play



# Marcellus Shale – Footprint and Depth Map



Average drill depth = 6,300'

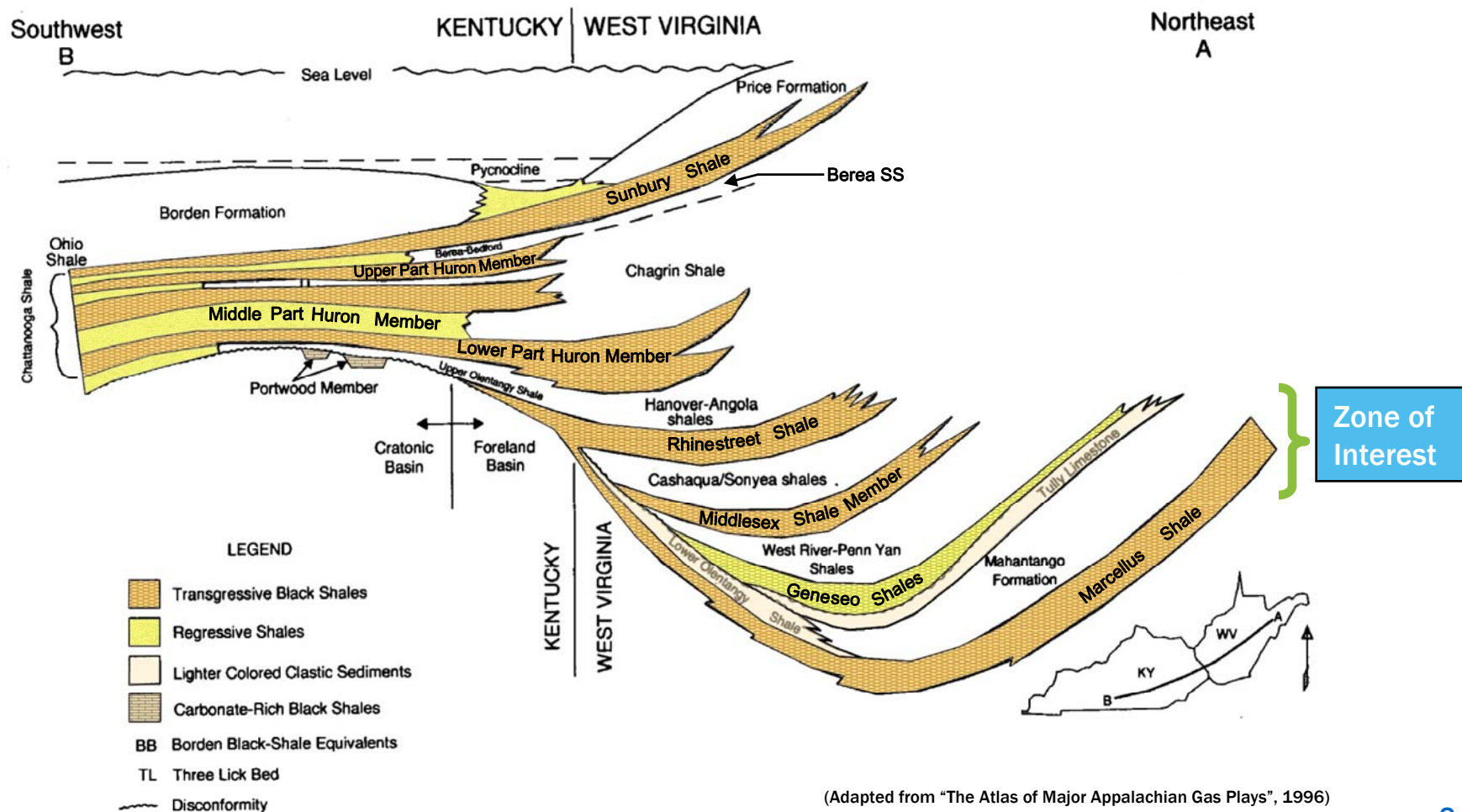
967 data points



11 core sites



# Relative Distribution of Shales

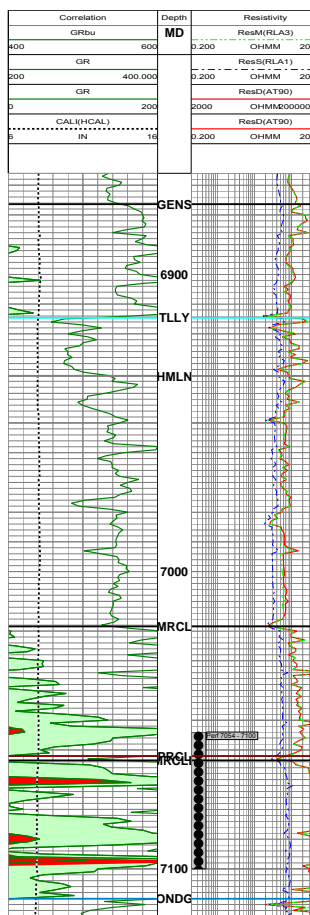




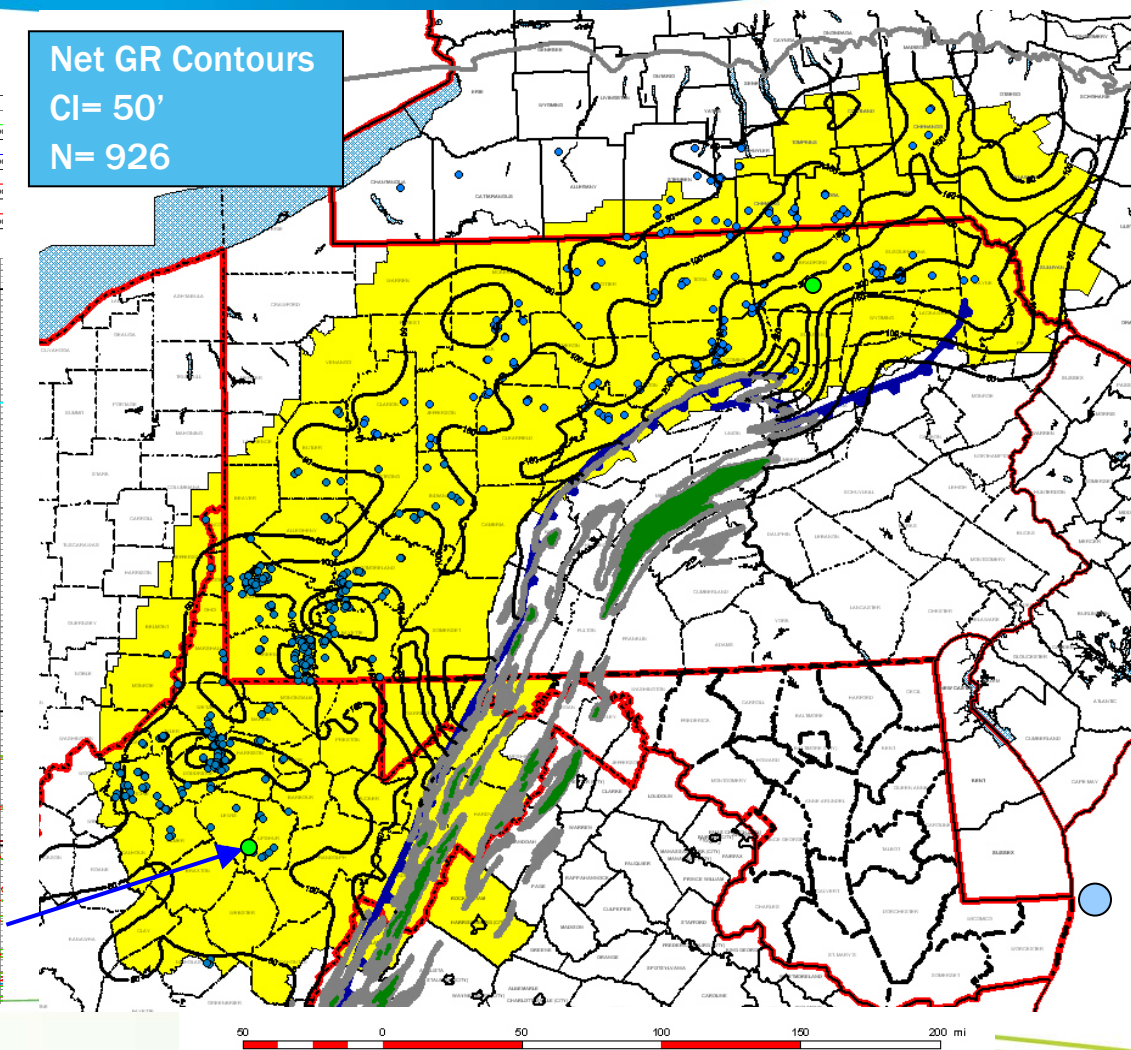
# Marcellus Shale – Net GR Isopach Map



Cyrus Kump



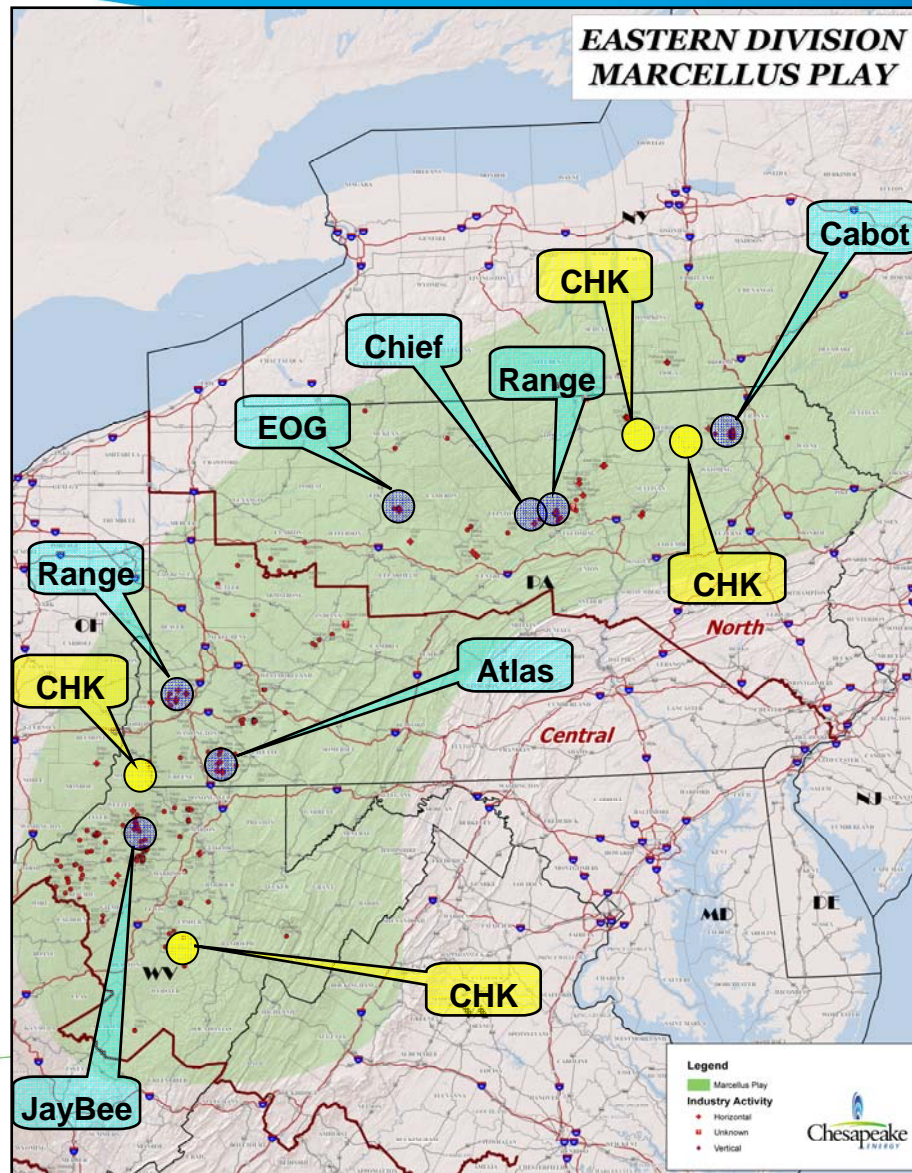
Net GR Contours  
CI= 50'  
N= 926



Competitor Activity



# Marcellus Shale – Drilling Activity



## Rig Activity Notes:

- Review of permits from rig locator shows 30 rigs drilling for Marcellus objectives in the trend (NY, PA, and WV) last week
- Major current operators: CHK, RRC, Atlas, COG, Chief, SWN
- RRC has drilled ~70 vertical and ~30 horizontal Marcellus Shale wells
- CHK has drilled 19 vertical and 6 horizontal Marcellus wells; now accelerating to horizontal development
- 7 latest RRC horizontal Marcellus Shale reportedly wells average IP of ~4.9 mmcf/day
- 2 of CHK's 6 horizontal Marcellus Shale wells had IP of ~7 mmcf/day and combined EUR of ~11 bcfe

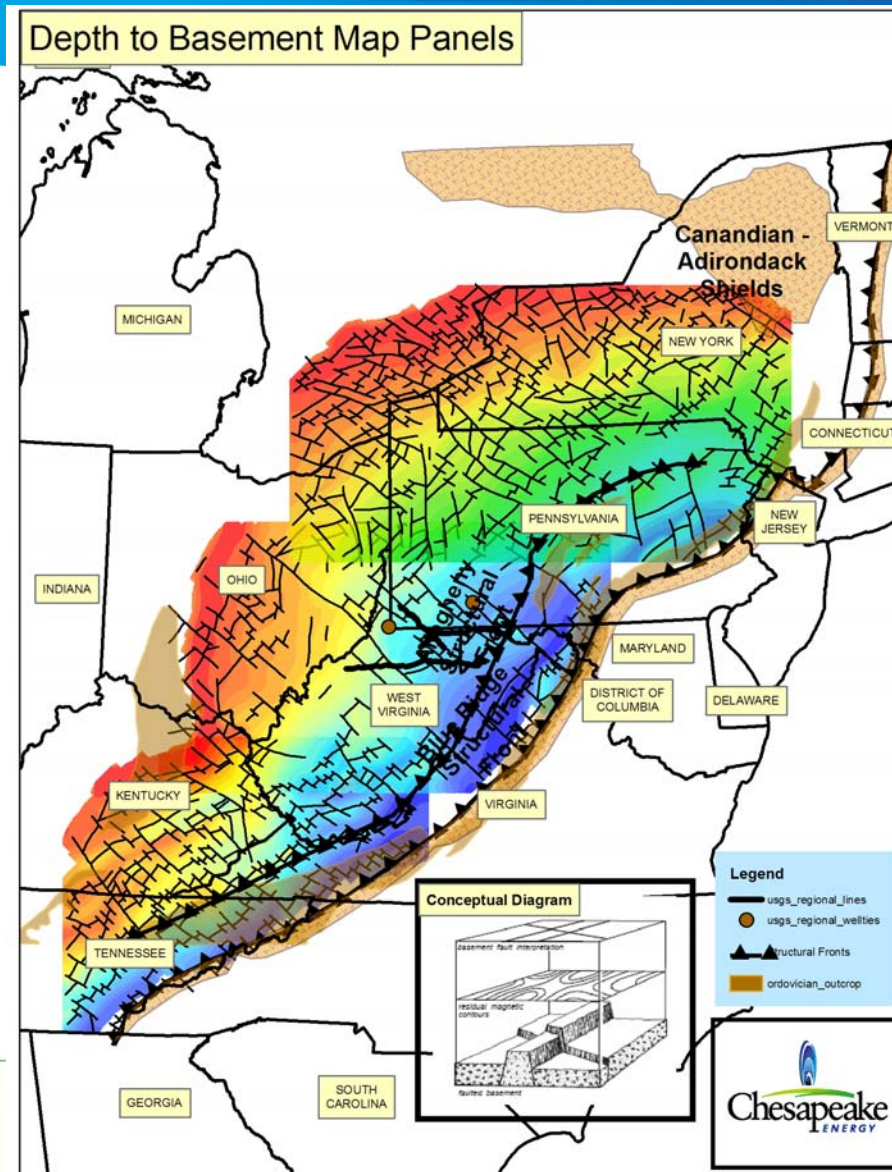
# CHK's Eastern Division 2-D and 3-D Seismic Database



- **36,000 line miles of 2-D seismic data across Appalachian Basin**
  - 30,000 line miles of proprietary and licensed data
  - 6,000 line miles licensed/acquired since CNR acquisition in 2005
- **813 square miles of proprietary 3-D seismic data acquired since 2006**
  - Distributed over 17 existing or planned 2008 3-D surveys
  - 10 3-D surveys fall within Marcellus footprint (470 square miles)
  - 4 3-D surveys acquired in 2008 (324 square miles )
  - Average size ~50 square miles
  - Yearly acquisition typically 300 square miles
- **Potential fields**
  - EarthFields NURE Data set
  - PRJ Aeromag Surveys
  - Applied Geophysics Surveys
  - Gravity Data (Public Domain)

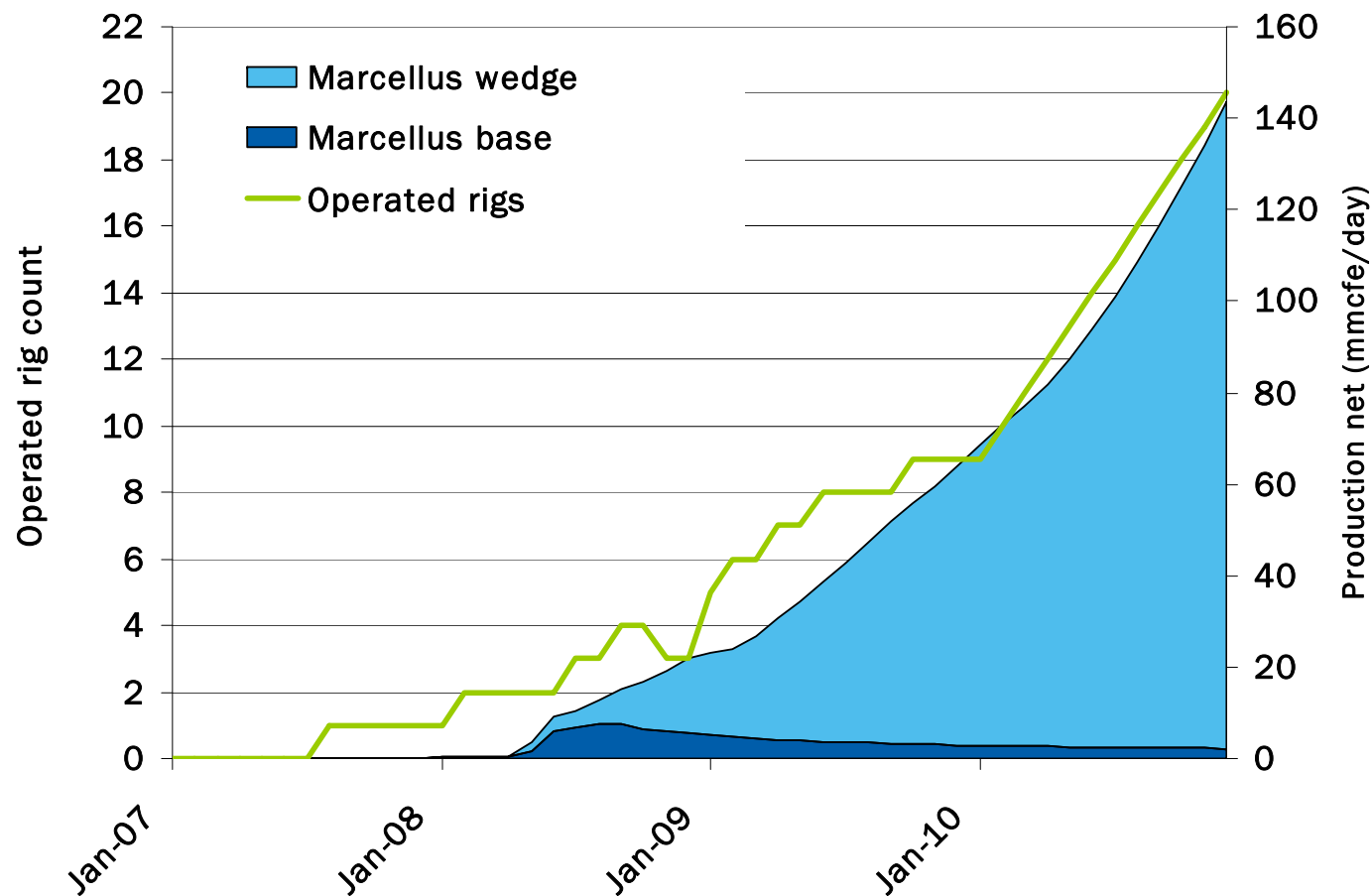


# Aeromagnetic Data





# Marcellus Shale – Growth Profile

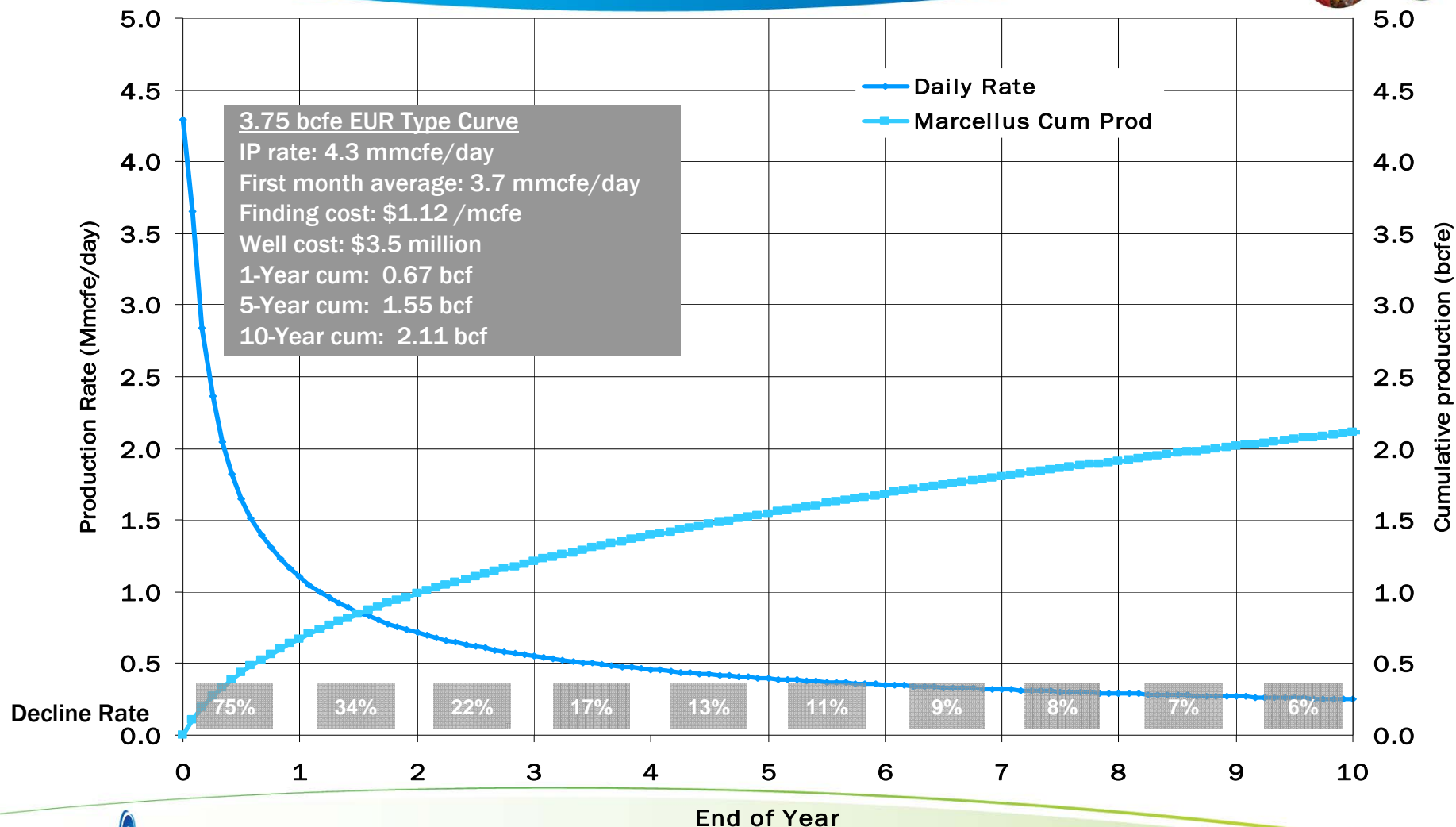


# Marcellus Shale – Development Plan



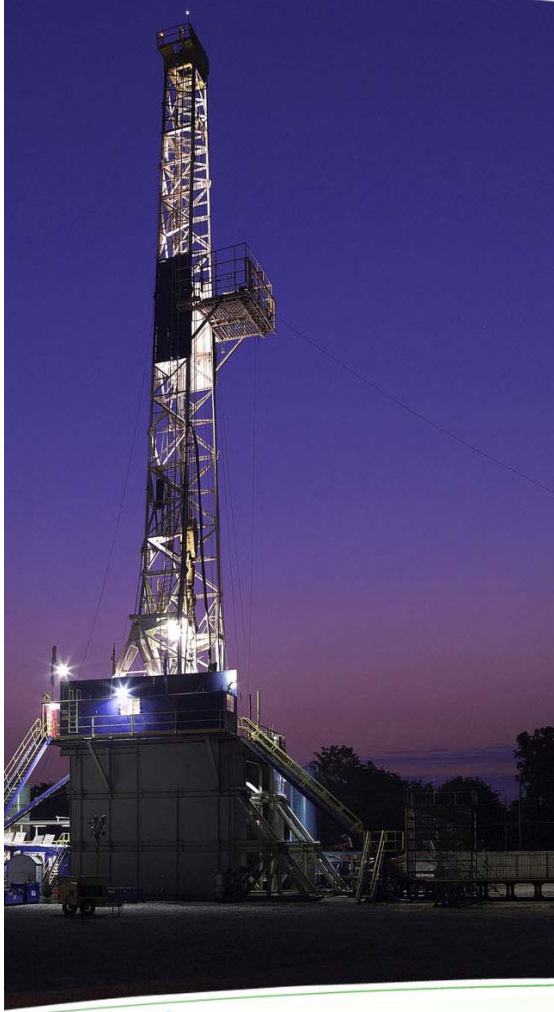
- CHK net leasehold acres of 1.8 million
- 80-acre spacing
- 5,500 potential net risked wells to be drilled
- Average IP rate: 4.3 mmcfe/day
- First month average production of 3.7 mmcfe/day
- Average EUR of 3.75 bcfe/well
- Drilling and completion costs of \$3.5 million per well
  - Drillbit F&D cost of \$1.12 per mcfe
  - 4,000' average horizontal lateral length
  - 4 stage fracture stimulation stages
- Days to drill wells: 30 days
- Total unrisked unproved reserve potential: ~69 tcfe
- Assumed risk factor: 75%
- Total risked unproved reserve potential: ~17 tcfe
- Average operated rig count per year: 3 rigs right now increasing to ~20 rigs by 2010

# Marcellus Shale – Pro Forma Horizontal Well Profile



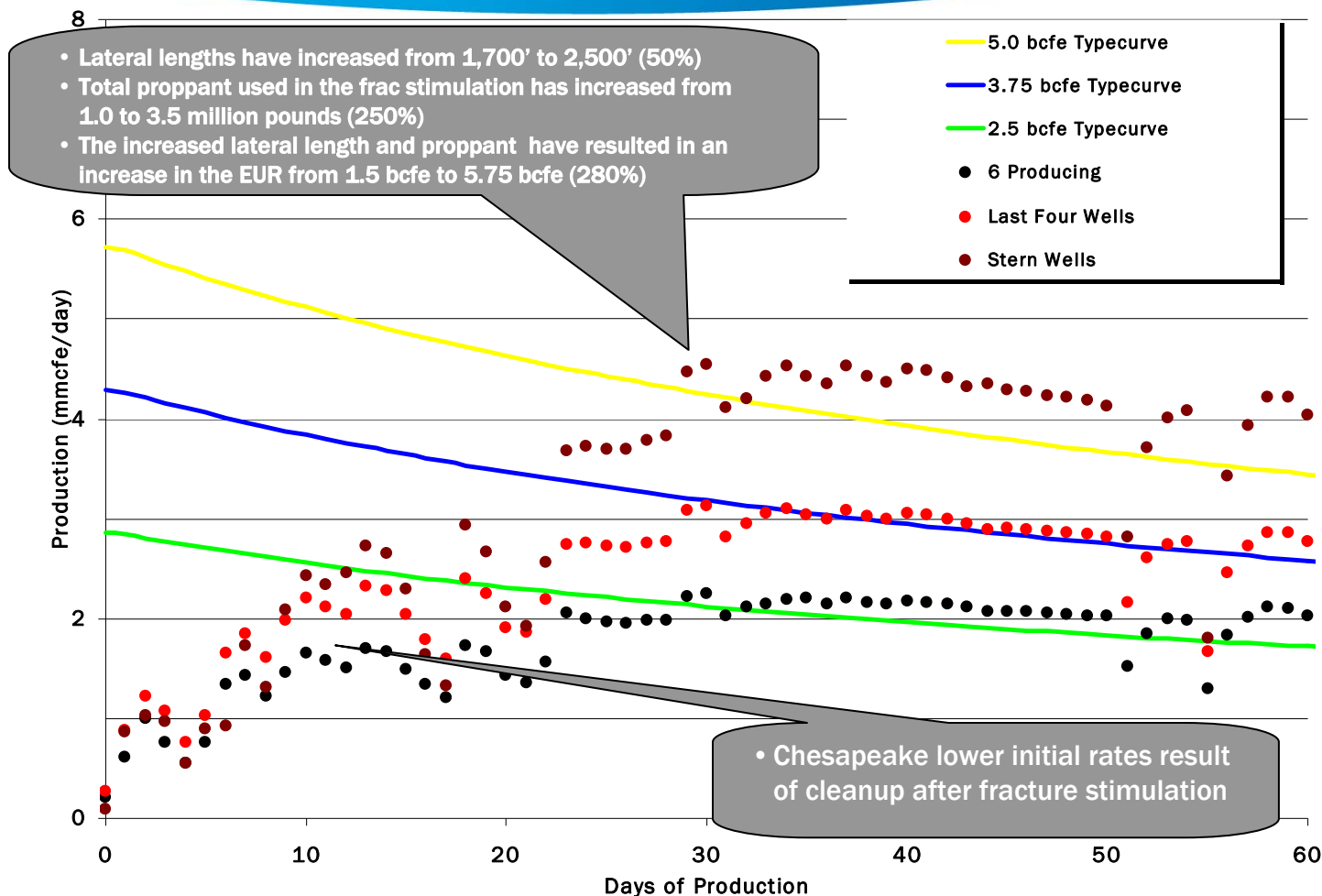


# Marcellus Shale – Upside to Reserve Potential

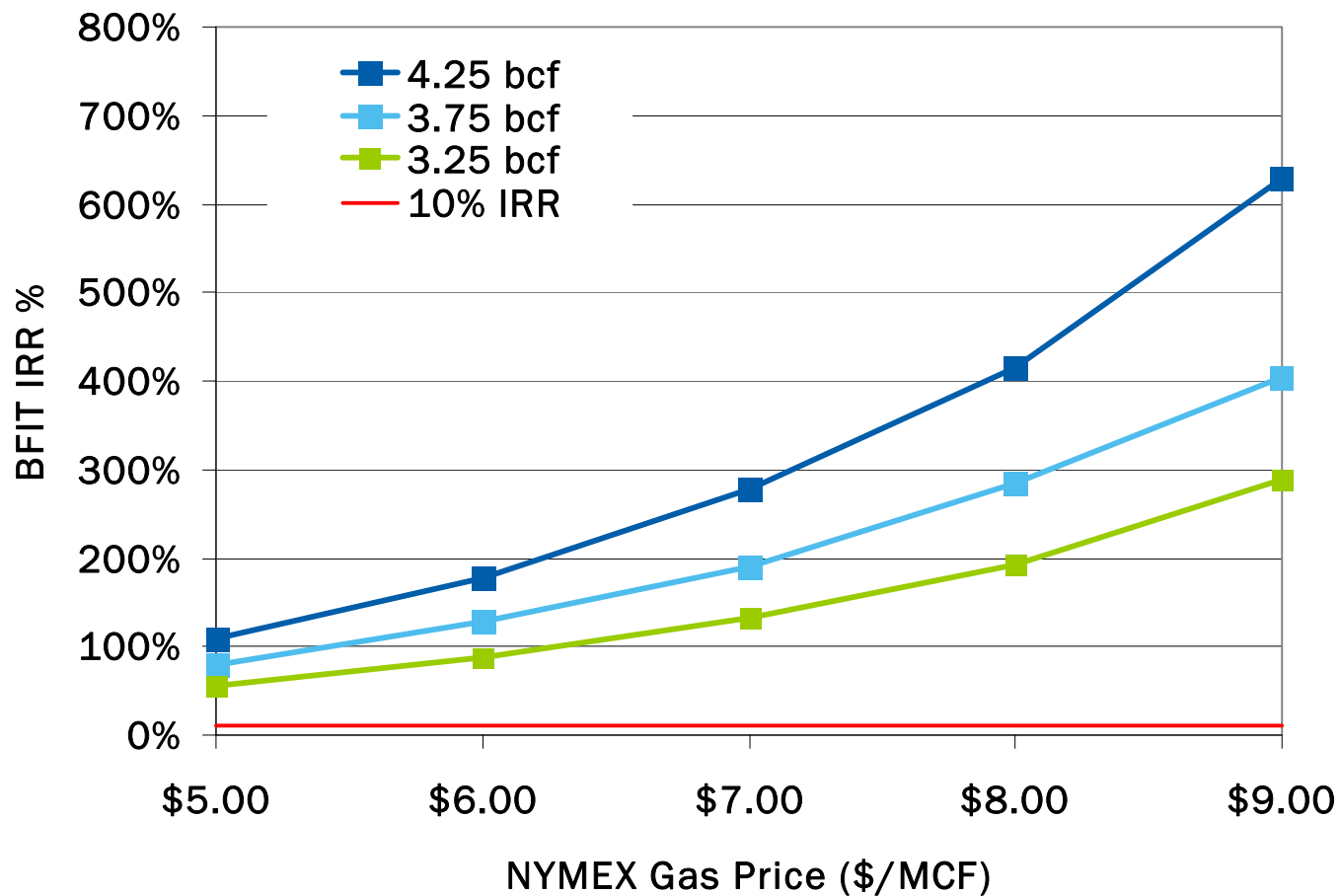


- **Higher IP rates**
  - Stern wells average 30 day IP = 4.3 mmcf/day compared to pro forma 3.6 mmcf/day
  - Range Resources reported IP rates in last 17 horizontal Marcellus wells 4.1- 4.9 mmcf/day
- **Observed initial declines less than 75% of pro forma prediction**
  - Horizontal time zero type curve matches 52% initial decline
  - Vertical time zero type curve matches 67% initial decline
- **Horizontal laterals to be increased to 4,500+ feet**
- **Other CHK shale plays have increased EUR over time**
- **Other CHK shale plays have lower actual minimum declines less than 5%**
  - 3% minimum decline will increase pro forma well reserves by 0.48 bcf (seen in historical 400 vertical Devonian well set)

# Marcellus Shale – Horizontal Well Performance



# Marcellus Shale – Rate of Return Profile





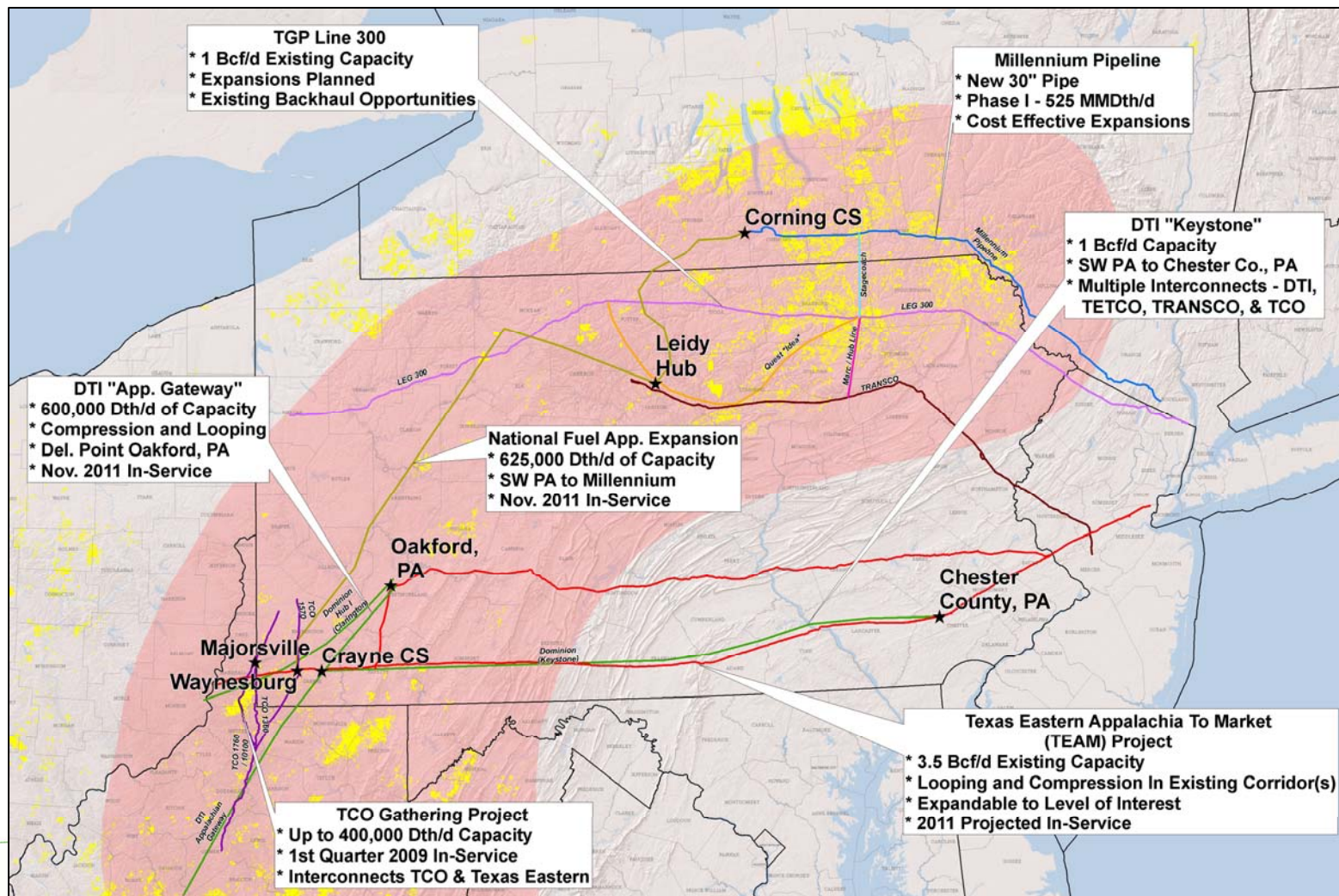
# Marcellus Shale – Marketing



## ● Marcellus marketing

- Access to large and growing Eastern U.S. markets
- Appalachian premium pricing (NYMEX plus ~\$0.40) plus BTU premium
- Existing interstate pipelines throughout Marcellus play
- Numerous expansion projects announced
- Existing taps into interstate pipelines and additional ones underway
- Opportunity to market to existing capacity holders avoids upstream variable costs
- CHK developed and operated gathering infrastructure
- Experienced midstream operator (6,800 miles gathering, 70,500 HP of compression at 85 sites and 3 natural gas processing facilities)

# Marcellus Shale – Marketing and Pipeline Map







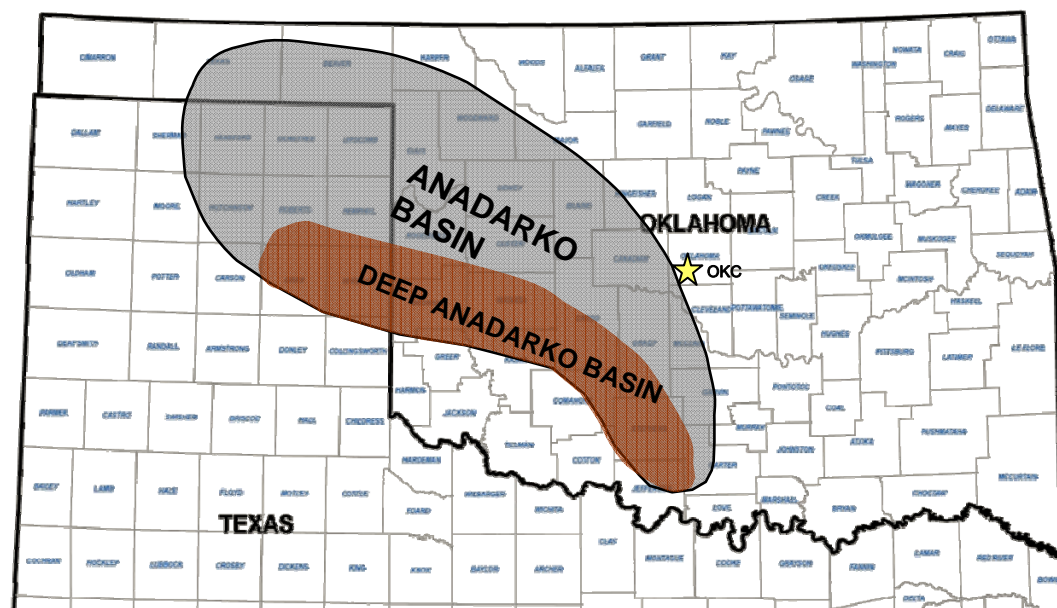
# Anadarko Basin Washes and Sahara Overview

Scott Sachs, VP Geosciences – Northern Division





# Anadarko Basin – Key Geological Factors



- The Anadarko Basin is the thickest and deepest basin in the U.S.
- Paleozoics sediments are estimated to be up to 40,000' thick, and Cambrian igneous rocks are estimated as thick as 20,000'
- From Cambrian through end of Mississippian, the depositional environment is dominated by a broad continental shelf in a shallow sea
- Early Pennsylvanian (Wichita Orogeny) Basin faulting resulted in up to 40,000' vertical displacement and left lateral movement which may be up to 15 miles

# Anadarko Basin – Stratigraphic Column & Cross Section

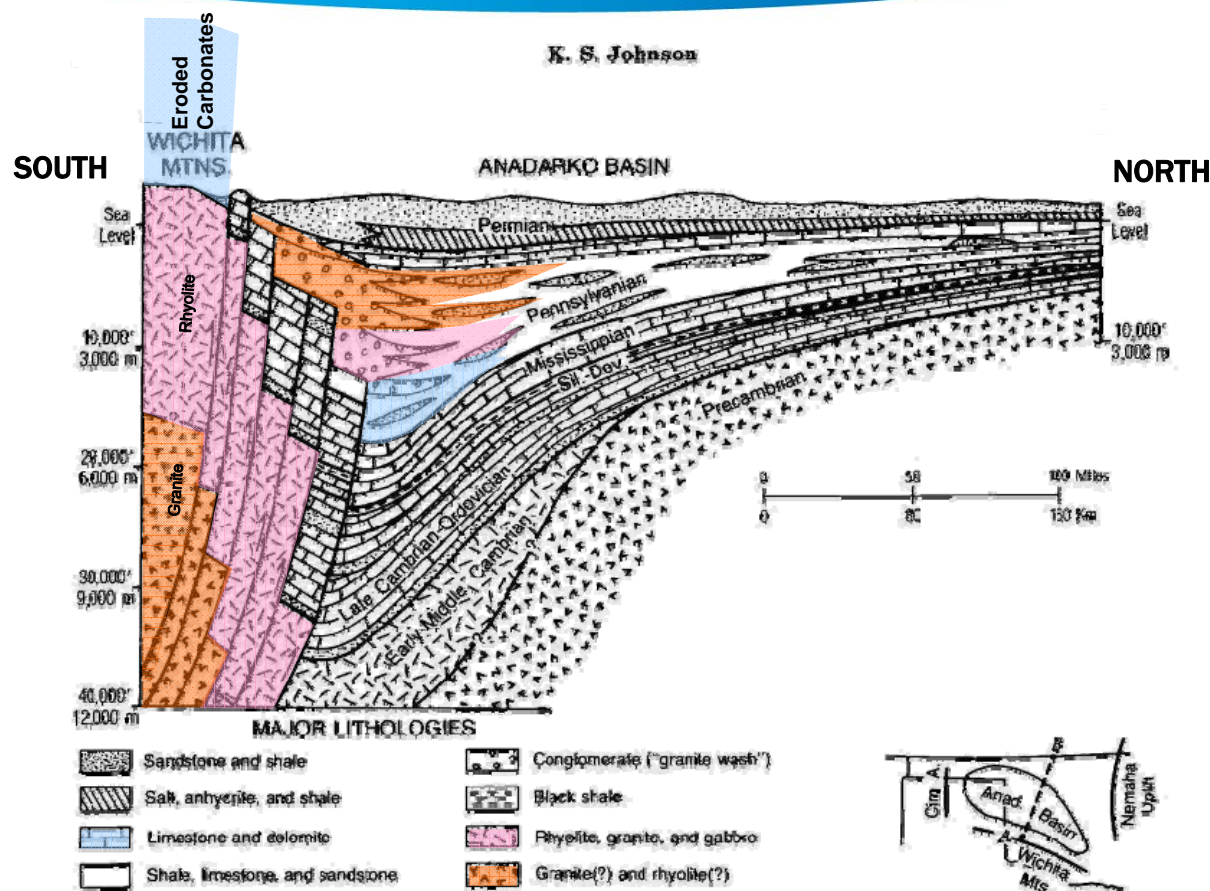
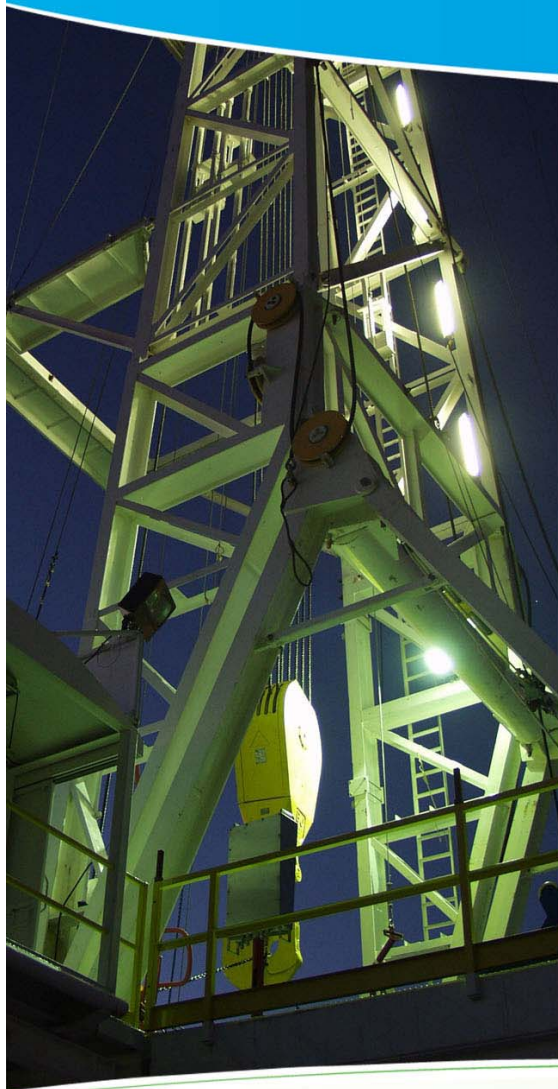


Figure 4. Generalized north-south structural cross section through the Anadarko basin of western Oklahoma (modified from unpublished cross section by Herbert G. Davis).

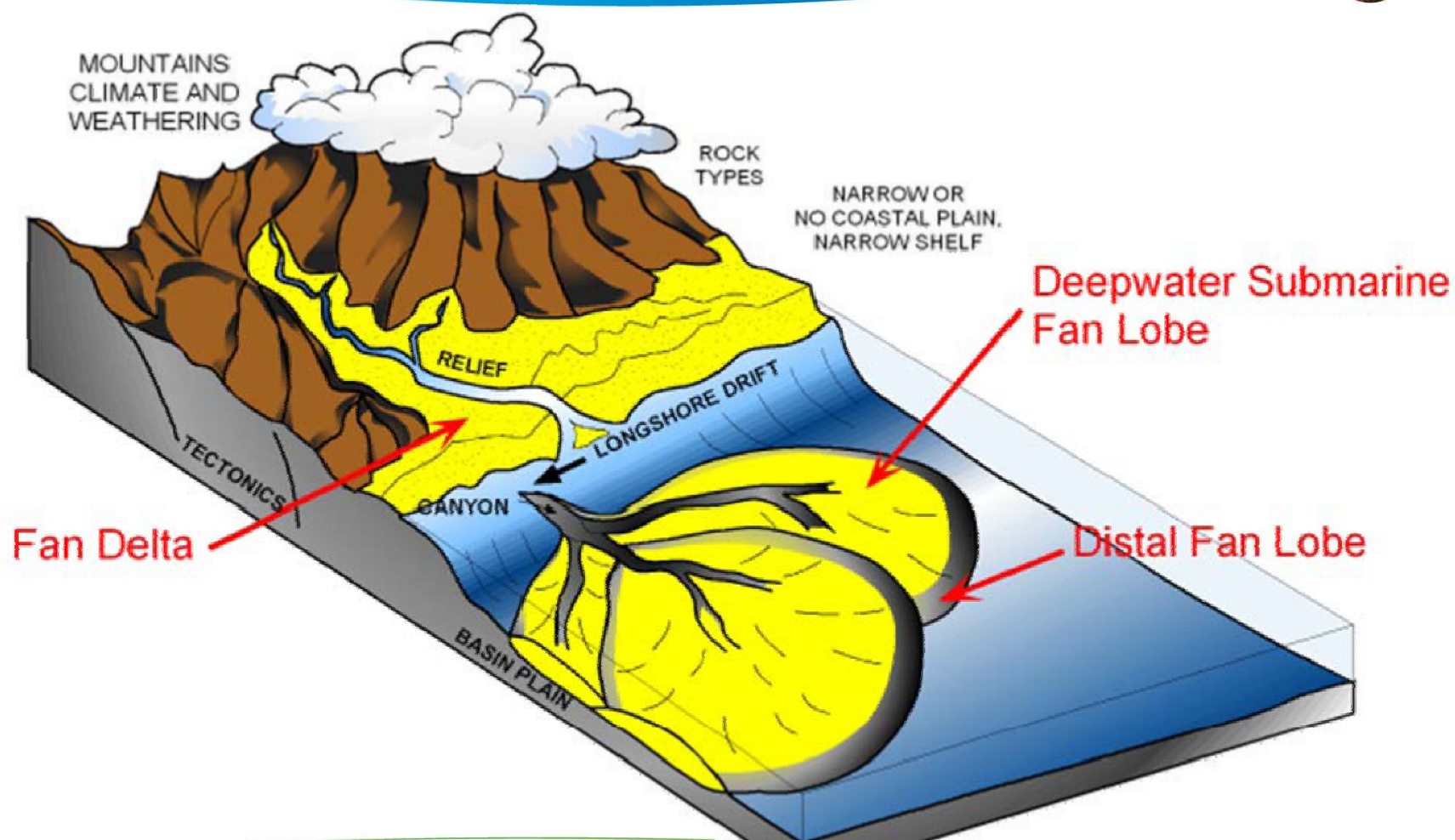
# Granite Wash – Overview



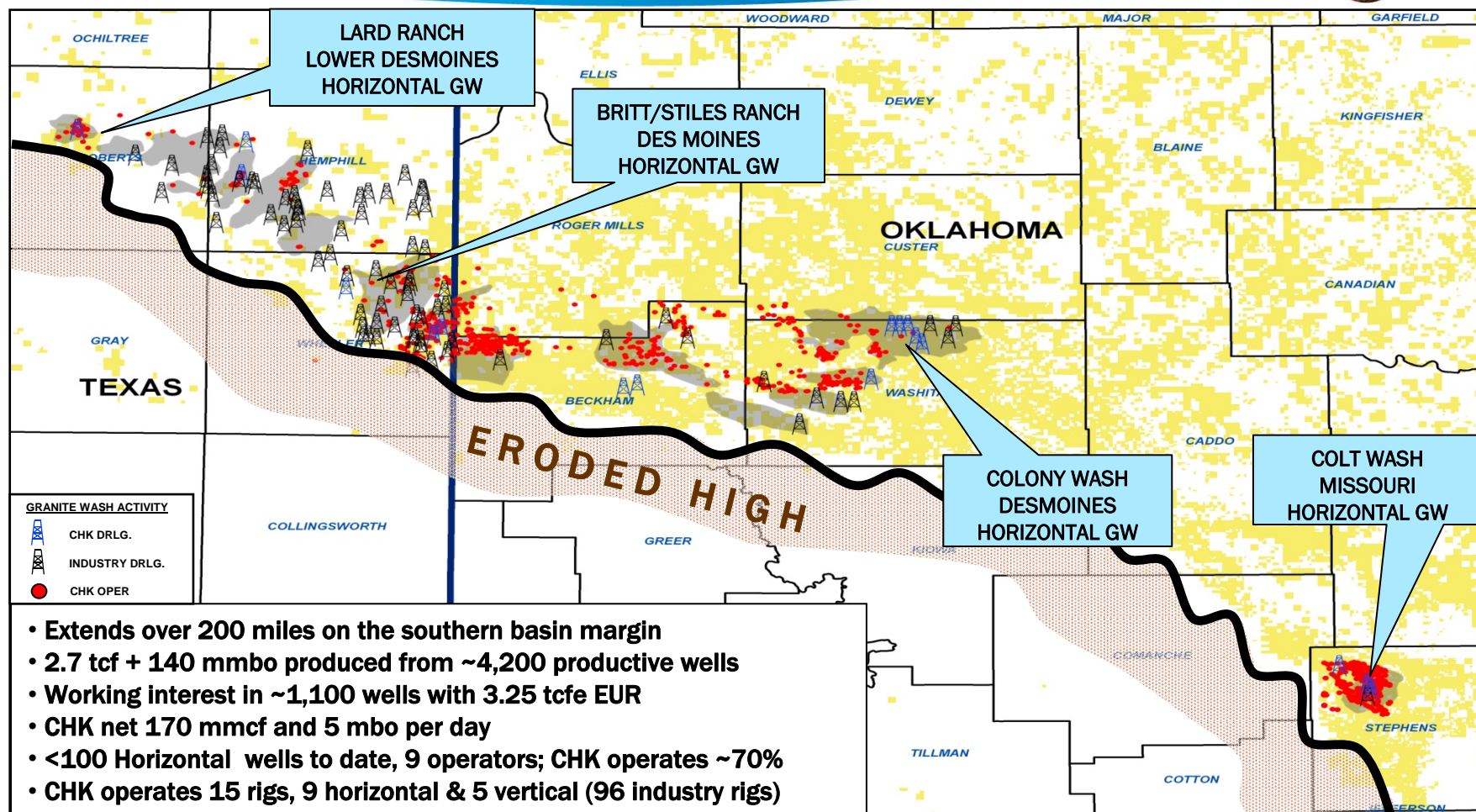
- **CHK is the most active operator in multiple Wash targets**
  - 9 horizontal rigs
  - 5 vertical rigs
  - Stacked pay intervals: Atoka, Cherokee, Des Moines Washes
- **Initial flow rates and EUR**
  - Atoka vertical 2 – 5 mmcf/day; 1 - 5 bcfe
  - Cherokee horizontal 5 – 10 mmcf/day; 3 - 7 bcfe
  - Des Moines horizontal 3 – 6 mmcf/day; 3 - 6 bcfe
  - Colony Wash horizontal 3 – 15 mmcf/day / 3 – 8 bcfe
- **CHK owns 335,000 net leasehold acres over entire Wash play**
- **CHK has identified several potential new or extensional horizontal Wash plays**
  - CHK controls 12,500 net acres in the West Colony Wash that encompasses 50 square miles and contains 100+ potential horizontal locations
- **CHK horizontal drilling expertise and cost efficiencies unparalleled in Anadarko Basin**



# Anadarko Basin – What is a Granite Wash Reservoir?



# Granite Wash – Background & Stats





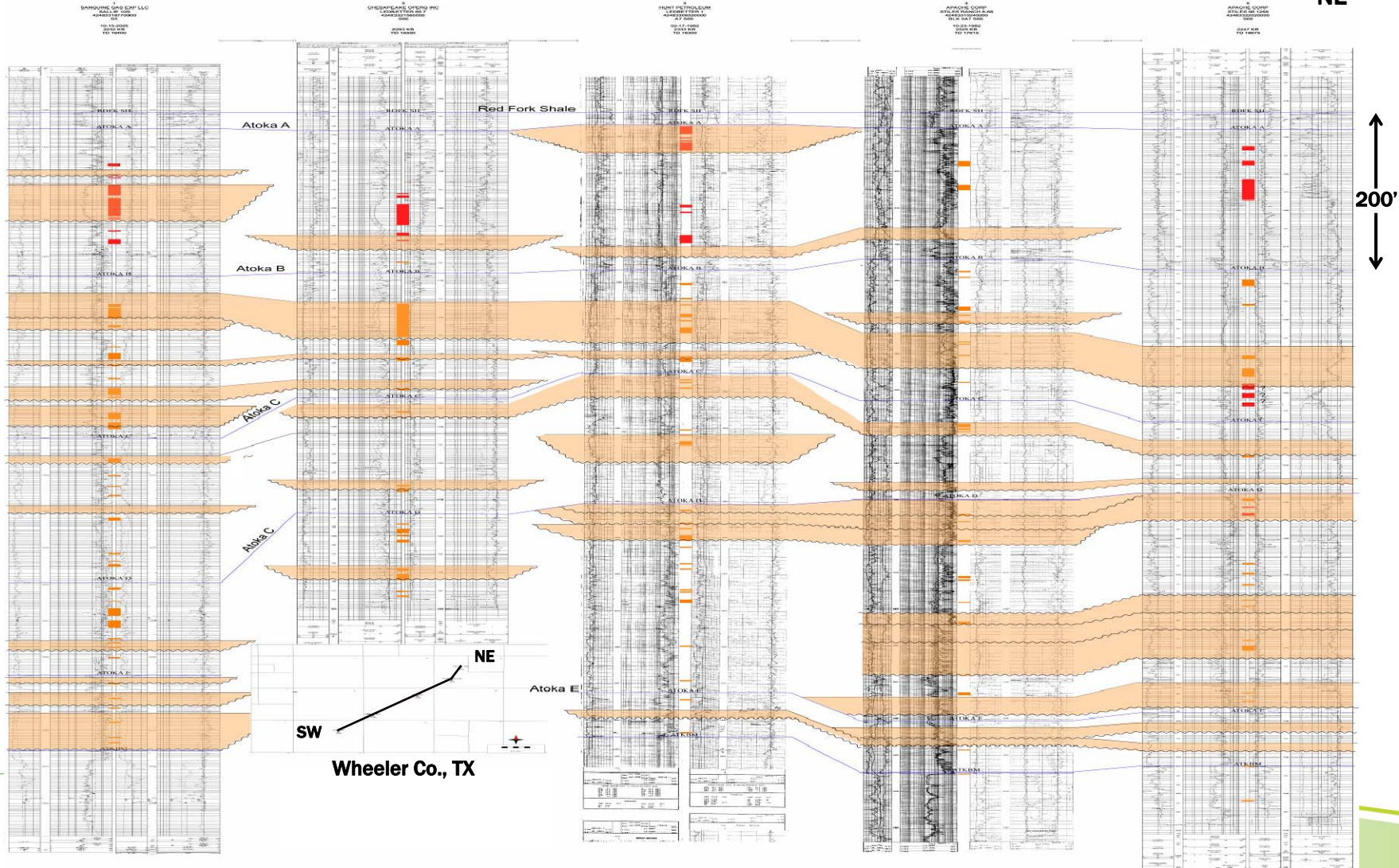
# Anadarko Basin Granite Wash – Complex Reservoir Architecture



SW

SW NE Cross Section, Sallie 105 to Stiles 68-12-68

NE





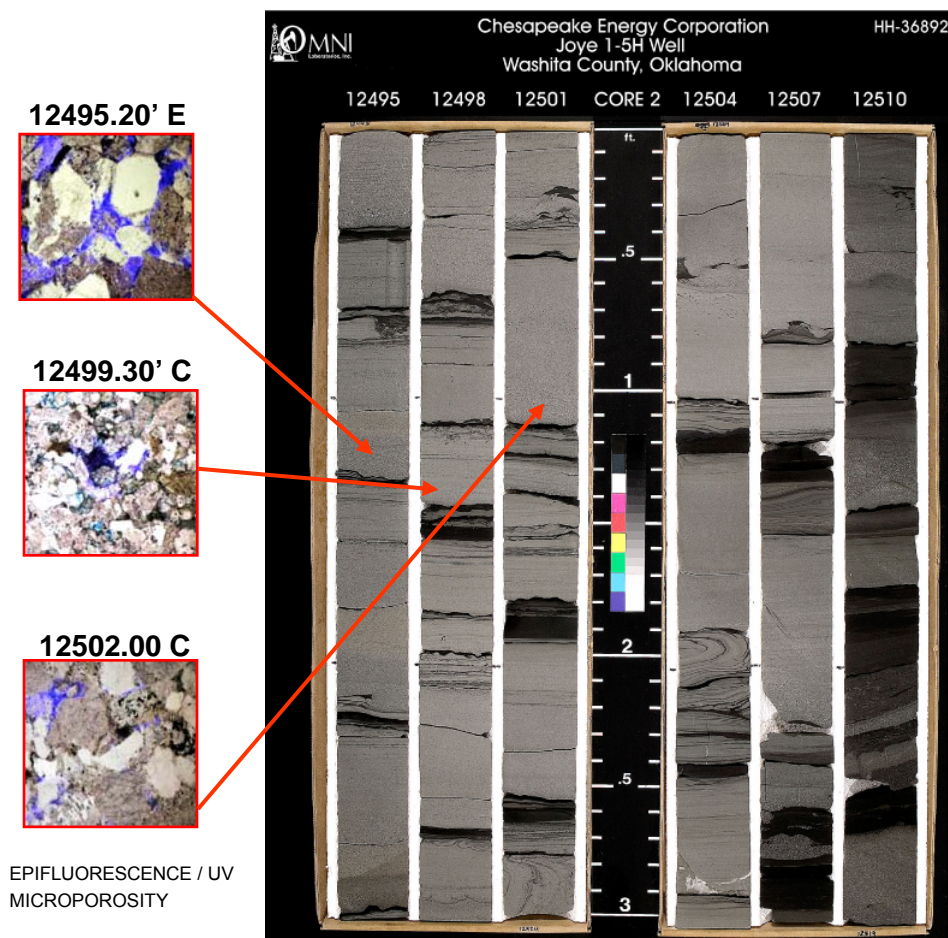
# Granite Wash – Why Horizontal Wells?



## Vertical vs. Horizontal Benefits:

- Obstacle is poor to mediocre economics of vertical wells but an aerially extensive target-rich stacked granite wash play fairway
- Vertical wells typically resulted in 0.5 to 1 bcfe EUR wells with low IP and thus poor economics
- CHK recognized that horizontal wells could overcome the unpredictable vertical well result
- Model anticipated that horizontal wells could provide the needed economic uplift ... possibly 3x EUR for 2x cost
- Pilot results and development program wells have shown 4-5x EURs for 2.5-3.0x wells costs
- Further economic uplift from oil-rich gas reservoirs

# Colony Wash – Background

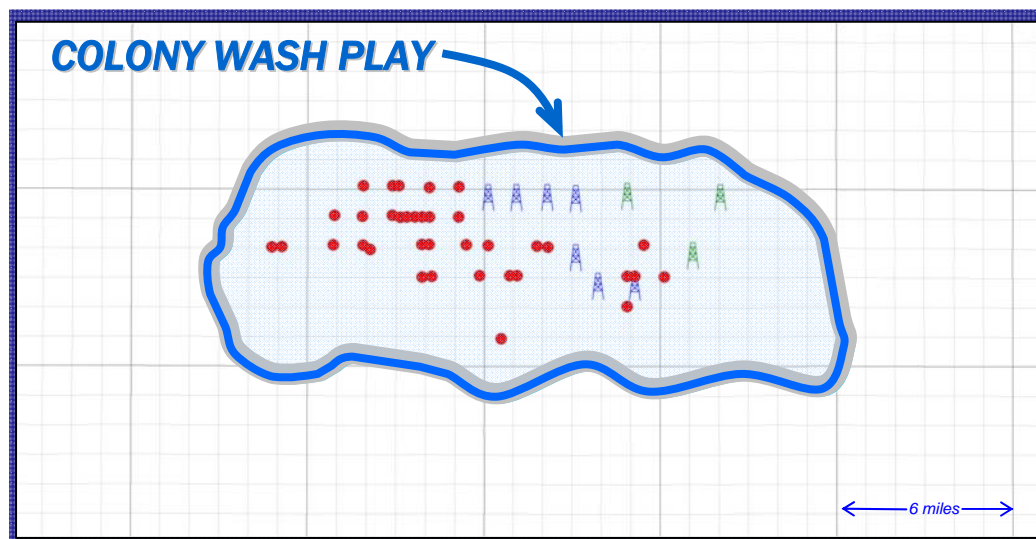


- CHK geoscientists recognized horizontal drilling and completion potential in regionally extensive Granite Wash reservoirs
  - Productive but sub-economic vertical wells
- CHK developed predictive depositional facies model based upon subsurface and core data
- CHK aggressively added to already dominant HBP and term leasehold position
- CHK began horizontal well pilot programs in 2006
- Horizontal drilling and completion technology proved highly effective
  - Geo-steering used to maximize wellbore exposure to best rocks
  - 6-8 large fracs along horizontal wellbore
  - Horizontal wells flow rates and reserves 5x vertical results for 3x well costs

# Colony Wash Activity



- **CHK controls ~60,000 net acres of leasehold**
- **CHK has completed 36 horizontal wells in 18 months**
  - Initial flow rates over 10 mmcf/day and 750 bbls/day from several wells
  - Gross daily production: Over 70 mmcf/day and 4,500 bbls/day
  - Cumulative production: Over 18 bcf and 1.2 mmbo to date
  - 5 operated rigs currently drilling
- **275 risked potential well locations on 160 acre spacing**
  - 200+ CHK operated
  - 17,000' measured depth
  - Average well cost of \$7 million/well
- **1.0 tcf of risked unproved reserves**
  - Average per well EUR: 5.5 bcfe
- **CHK drilling operations are the most efficient and cost effective**



COLONY WASH ACTIVITY	
	CHK drilling/completing
	Non-op drilling/completing
	Colony Wash producers

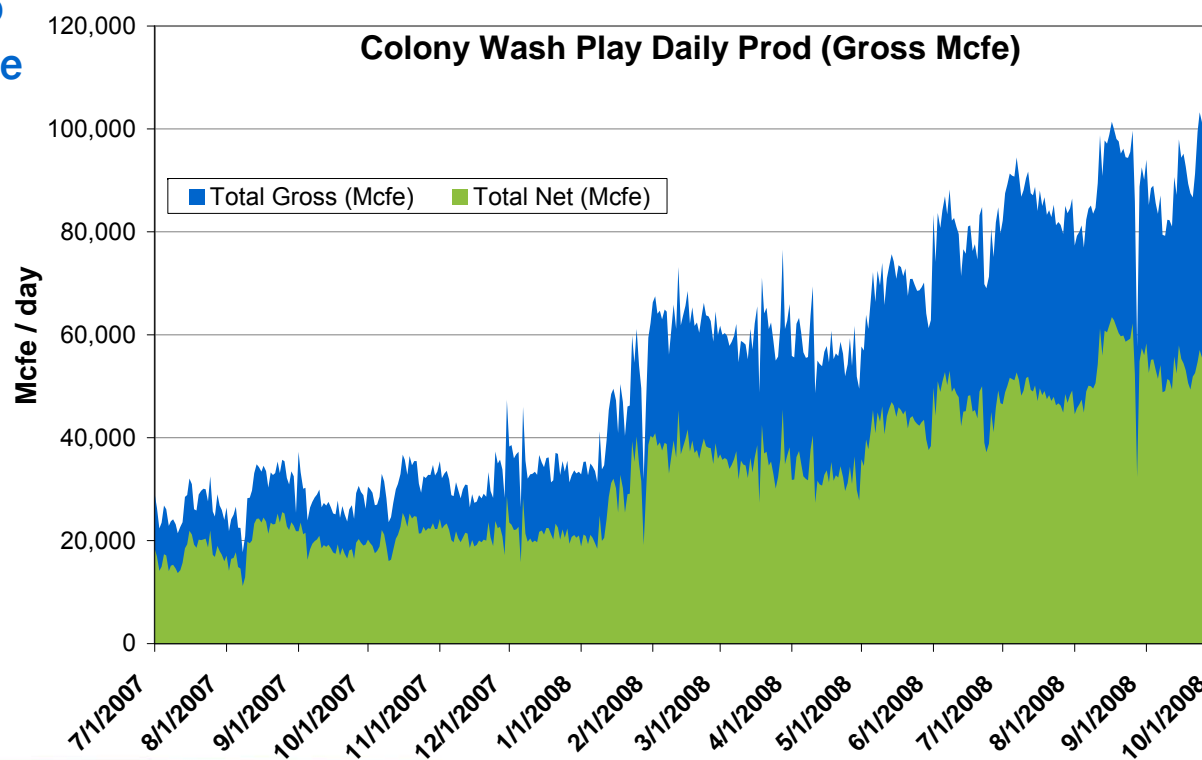


# Colony Wash – Economics & Growth

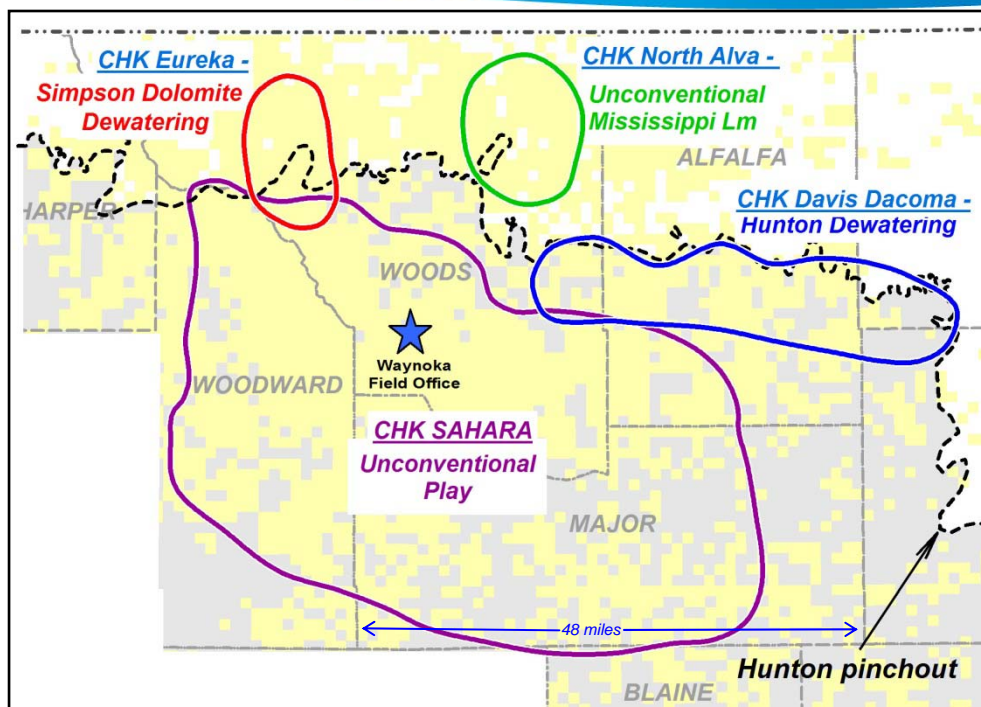


## Summary Proforma Economics:

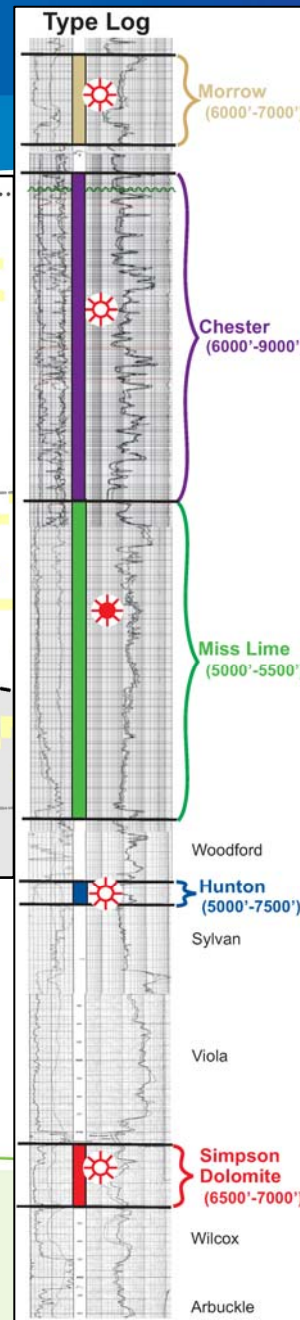
- Well cost of \$7.0 million
- IP: 4.2 mmcf/day and 400 bbl/day
- EUR: 4.7 bcf and 140 mbo
- Finding cost of \$1.61/mcfe
- ROR: ~450%



# Sahara



- **Primary Objectives:**  
Morrow, Chester, Miss Lime, Hunton, Simpson Dolomite
- **Secondary Objectives:**  
Tonkawa, Cottage Grove, Oswego, Red Fork, Inola, Viola
- **Drilling Depths:** 5,000' to 9,000' (12,700' MD for Hz)
- **Completed Well Costs:** \$750M to \$6,100M



- **Leasehold**
  - 970,000 net acres
- **Well Count**
  - Operated – 3,278
  - Non-Op – 1,975
- **Daily Operated Production**
  - Gross – 354 mmcf
  - Net – 226 mmcf
- **Total Proved Reserves**
  - 1.125 tcf
- **Past program 10-15 rigs, forecast reduced to 5-7 rigs 2009-10**

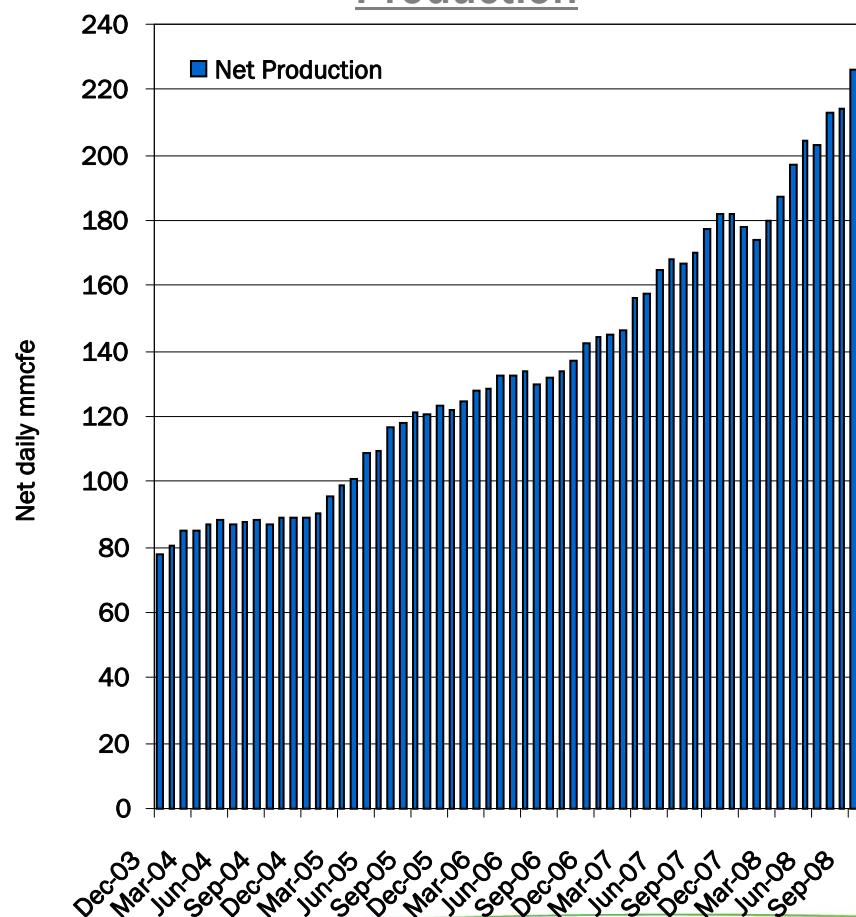


• Risk disclosure regarding unproved reserve estimates appears on page ii of the meeting presentation package

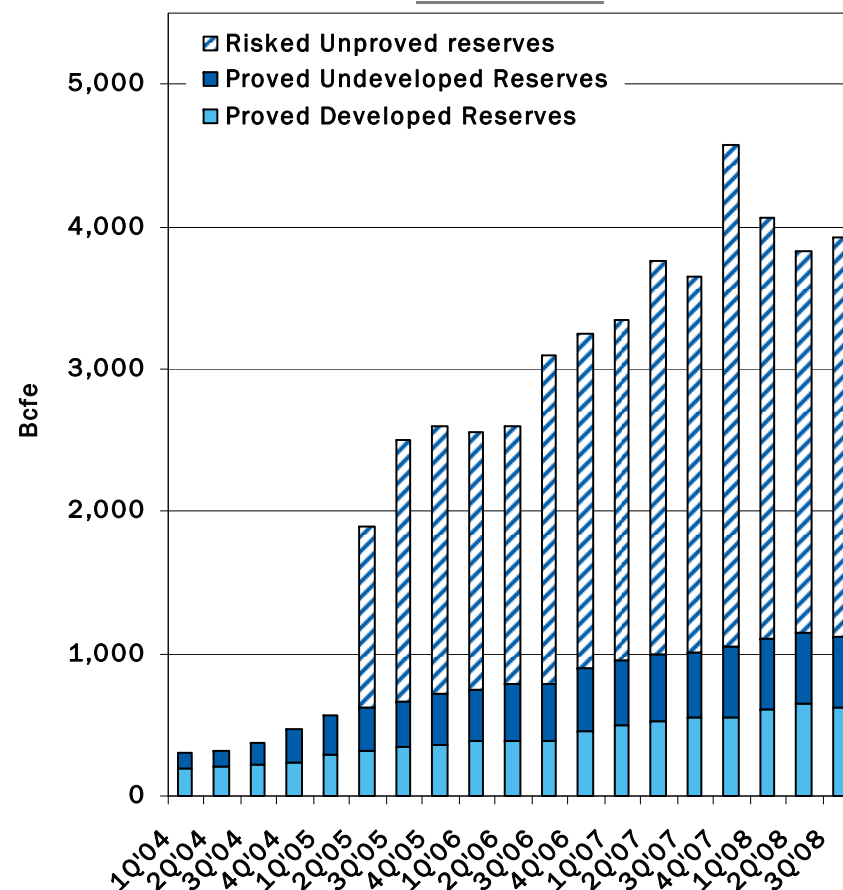
# Sahara – Production & Reserves



Production



Reserves



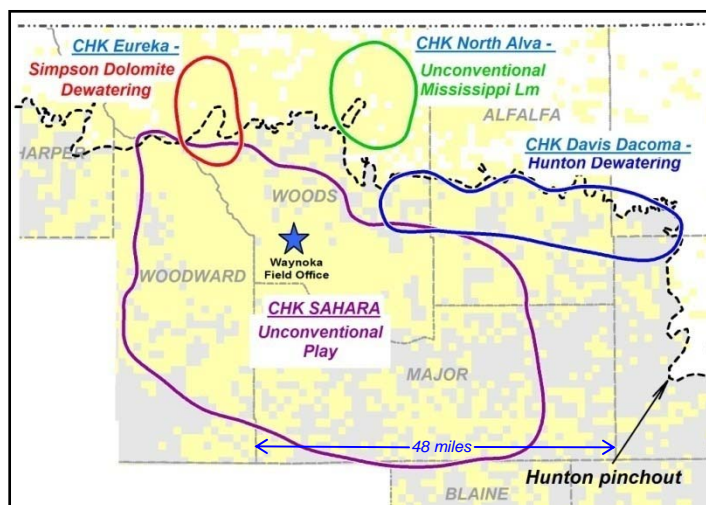
• Risk disclosure regarding unproved reserve estimates appears on page ii of the meeting presentation package



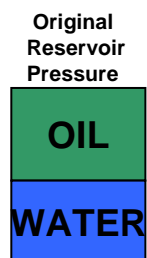
# Sahara – Dewatering Process & Plays



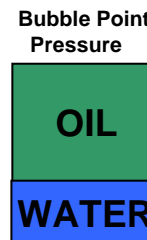
- In geologic past, the reservoir was oil and/or natural gas saturated
- Over time the trap was breached, water invaded and displaced natural gas/oil leaving residual natural gas/oil saturation behind
- Large volume water production depressurizes the aquifer (inactive or passive reservoir water drive)
- Reservoir pressure < bubble point and residual natural gas/oil is liberated
- Once critical oil/ natural gas saturation is met, increasing volumes are delivered to the wellbore



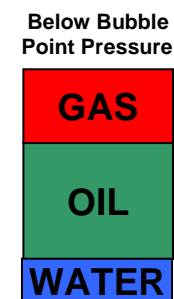
## Dewatering Schematic



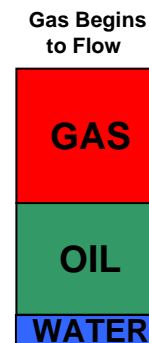
Gas is Dissolved In Under-Saturated Residual Oil



Oil Expands Slightly As Reservoir Pressure Declines (formation water produced) to Bubble Point

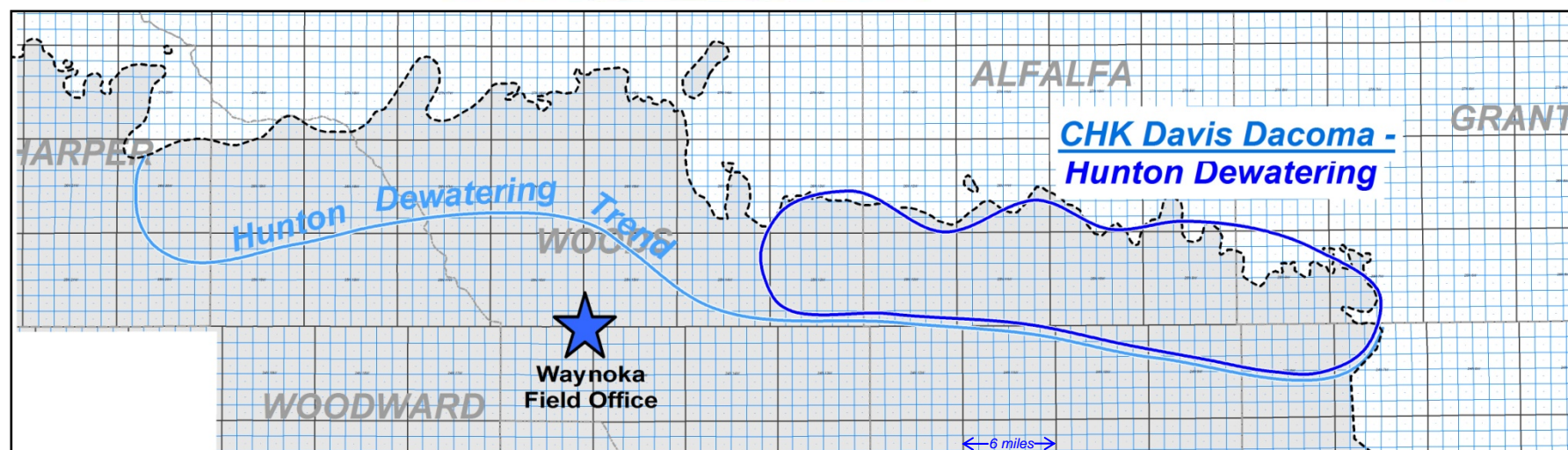


Oil Shrinks As Reservoir Pressure Declines Below Bubble Point Pressure and Gas Evolves from Solution



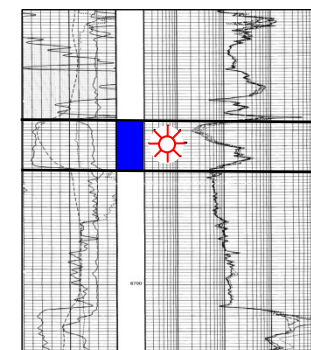
Gas Continues to Evolve and Expand to Fill Critical Gas Saturation and Gas Begins to Flow to the Wells

# Sahara – Hunton Dewatering Davis Dacoma Area



- Hunton Dewatering Trend: 90 miles in length; 5' to 50' thick
- CHK leasehold in trend: ~120,000 net acres
- CHK Alfalfa Co: 5 wells drilled in 2007-2008, 5 producing, 6.2 mmcf/day current production combined
- Proven play concept: 37 producing wells mostly by small Oklahoma independent companies

HUNTON DOLOMITE



# Sahara – Simpson Dolomite Dewatering Eureka Area

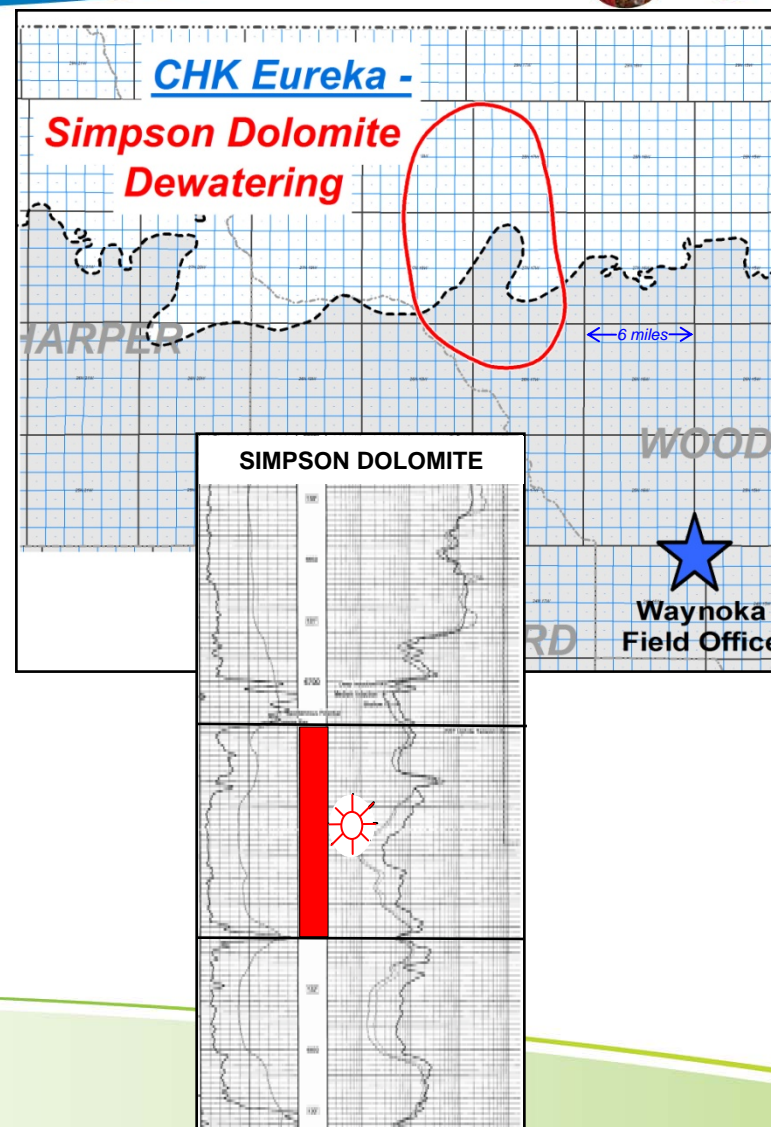


## ● Development Plan

- 1 vertical SWD and 4 producing wells per pod
- Producing wells deviated from central pad
- 640-acre spacing
- Economics \$1.87 finding costs, 60% ROR

## ● STATS

- CHK 41,000 net acres in play
- New 130 square mile 3-D survey in processing stage
- 21 current wells and 52+ potential future locations
- 1-2 rigs through 2009
- Anchor volume for 200 mmcf/day processing facility to be completed June 2009
- 70+ miles of low and high pressure gathering lines





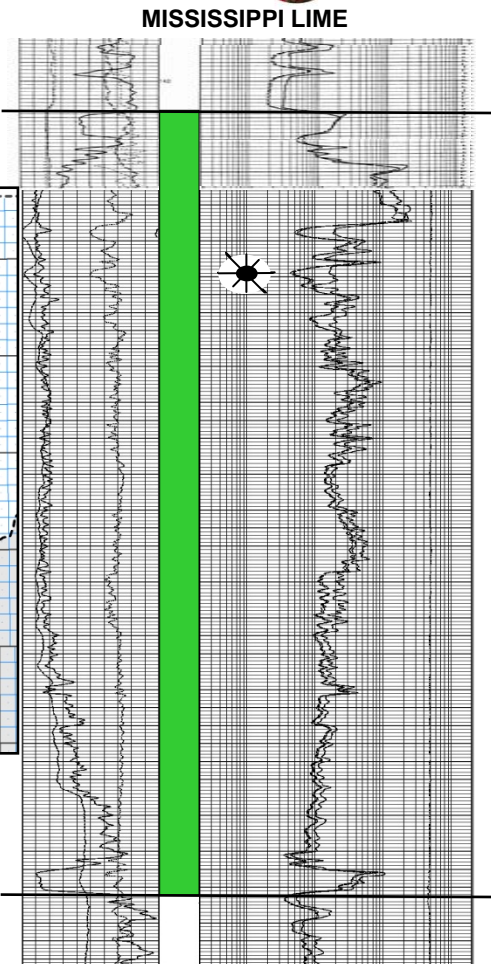
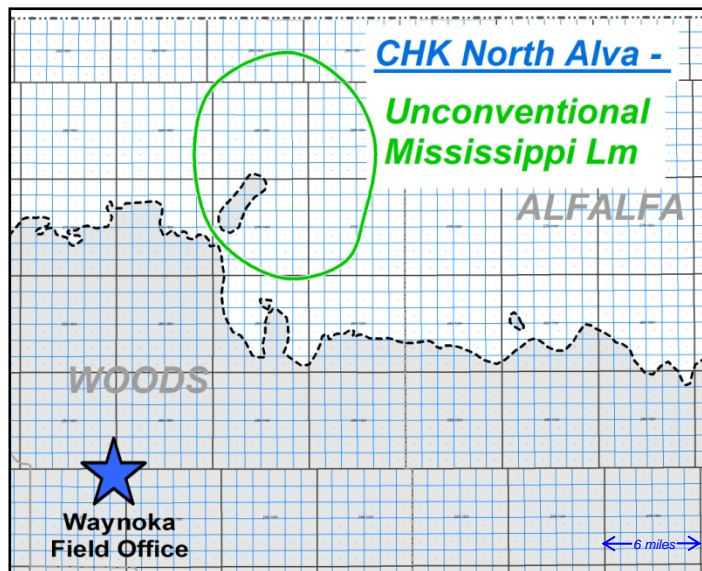
# Sahara – Unconventional Mississippi Lime Why Did Others Miss This Gas Reservoir?



- **Sparsely drilled area and wrongly condemned north of the Hunton Pinchout**

- Unconformity mentality
  - Pay at the top of the Mississippi only
  - Low resistivity – bypassed pay, logs look wet
  - Highly compartmentalized and low permeability
  - Large frac's needed to produce

- **Vertical wells explore deeper formations (Mackey 1-4) and HBP acreage**
- **Expand horizontal pilot – next phase of development**
- **CHK acreage: 102,000 net acres**
- **3.3 mmcf/day and 600 bbls/day**



# Sahara – Overview



## 1997

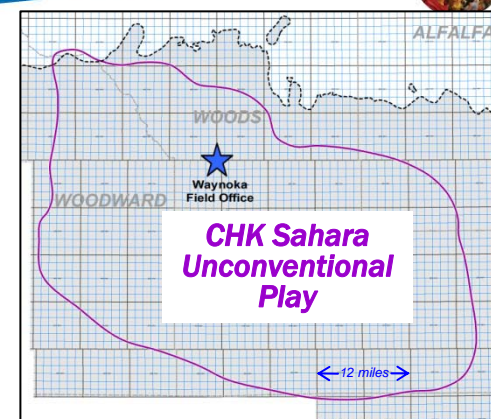
- CHK acreage/production = 0
- Historically older wells
- 1 to 2 wells / 640-acre unit

## 1998

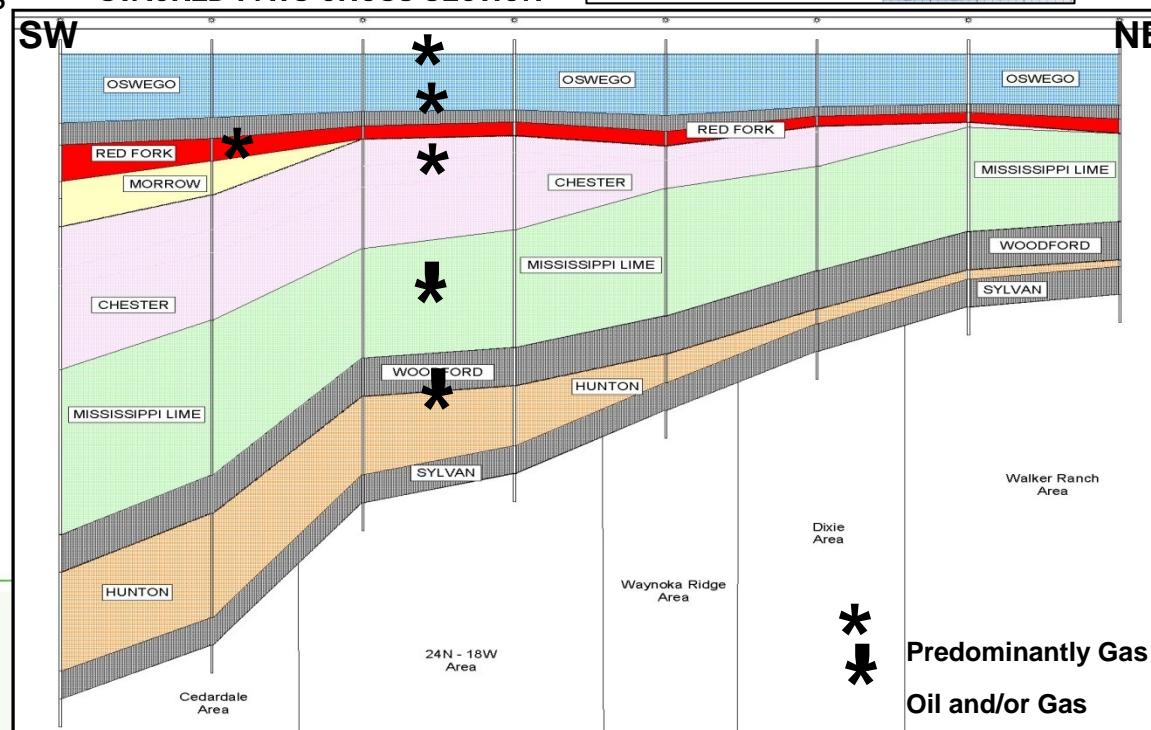
- CHK recognizes Chester as unconventional gas resource play:
  - Thick widespread discontinuous reservoirs
  - Low porosity/permeability
  - Limited drainage area
  - Multi-pay

## 3Q'08

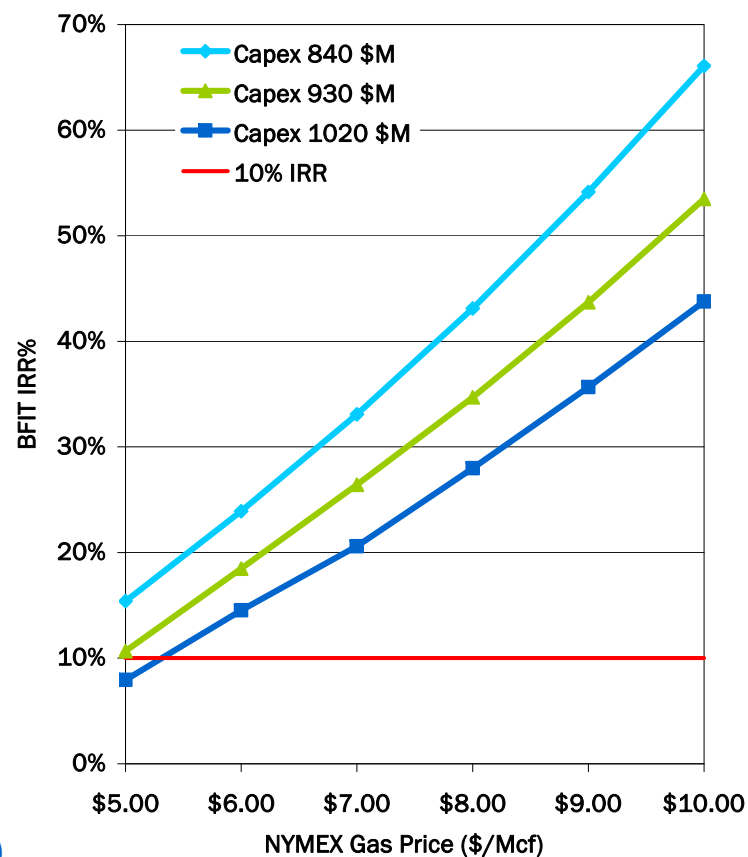
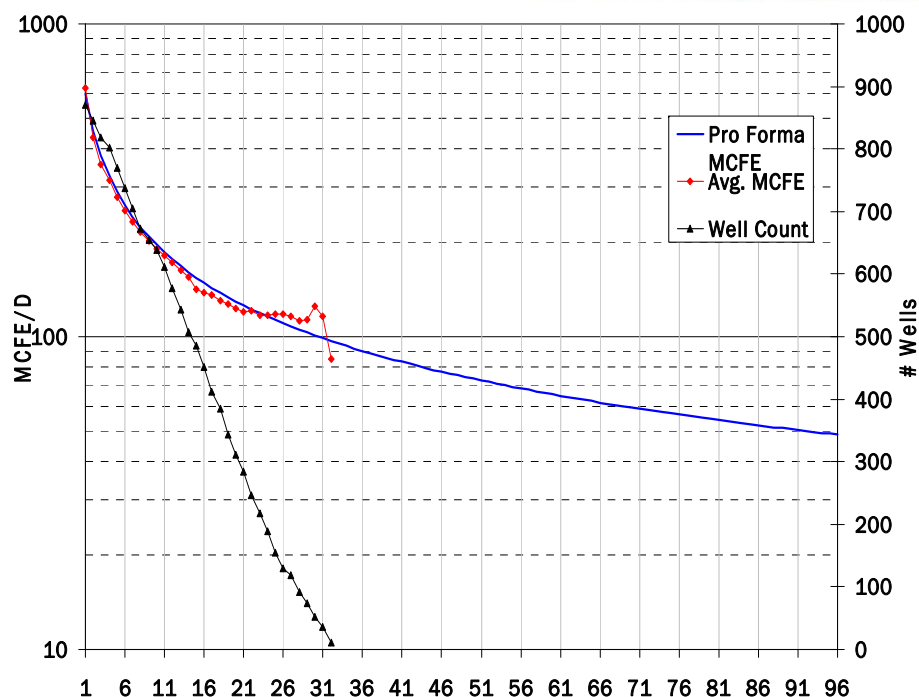
- Acreage: 970,000 net
- Total well count: 3,278 op and 1,975 non-op
- 1,621+ PUD locations
- Proved reserves: 1.1 tcf
- Risked unproved reserves 2.8 tcf
- Up to 8-16 wells/640-acre unit



STACKED PAYS CROSS-SECTION



# Sahara – Economics



- Avg CWC \$890 M
- 7-10 days to TD, additional 20 days to 1<sup>st</sup> sales
- Complete 180 – 200 wells/yr (~1 well every 2 days)
- Inventory of >5,000 wells
- 970,000 net acres, 56% HBP





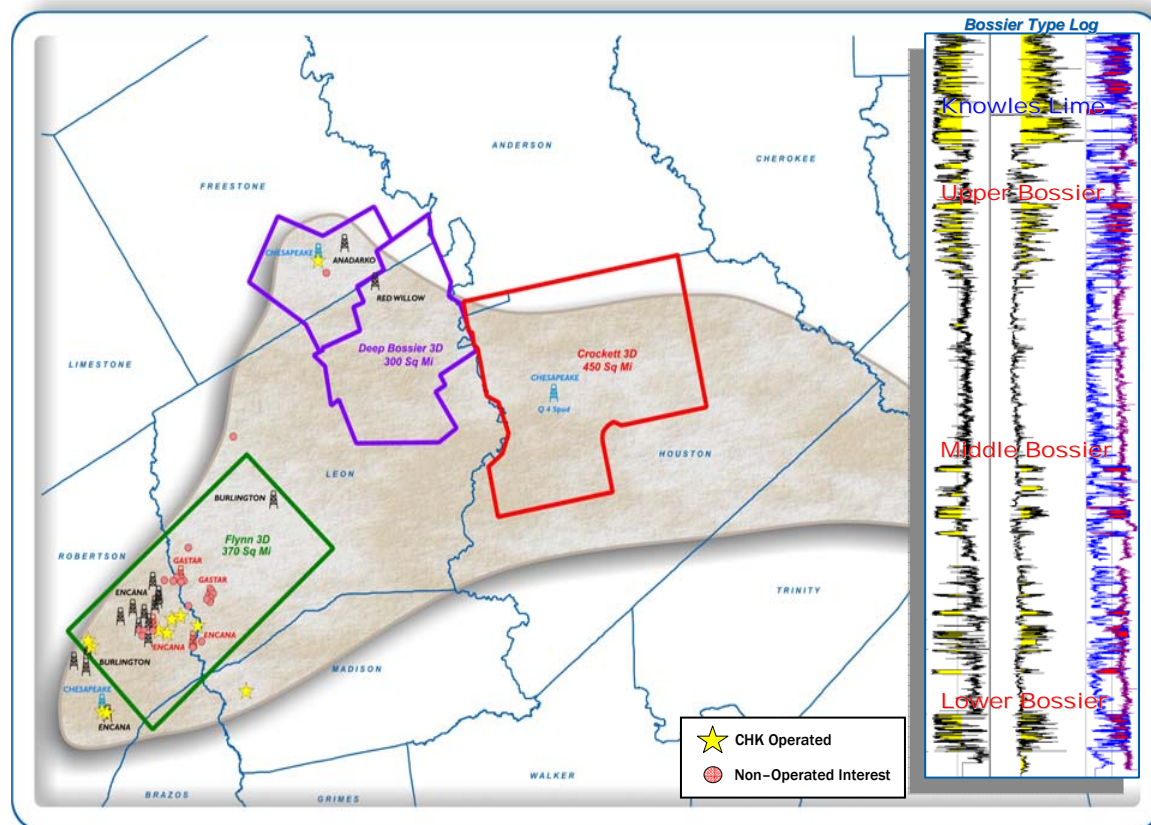
# Other Play Overviews

Mark Lester, EVP – Exploration

Larry Lunardi, VP – Geophysics



# Deep Bossier Play – East Texas

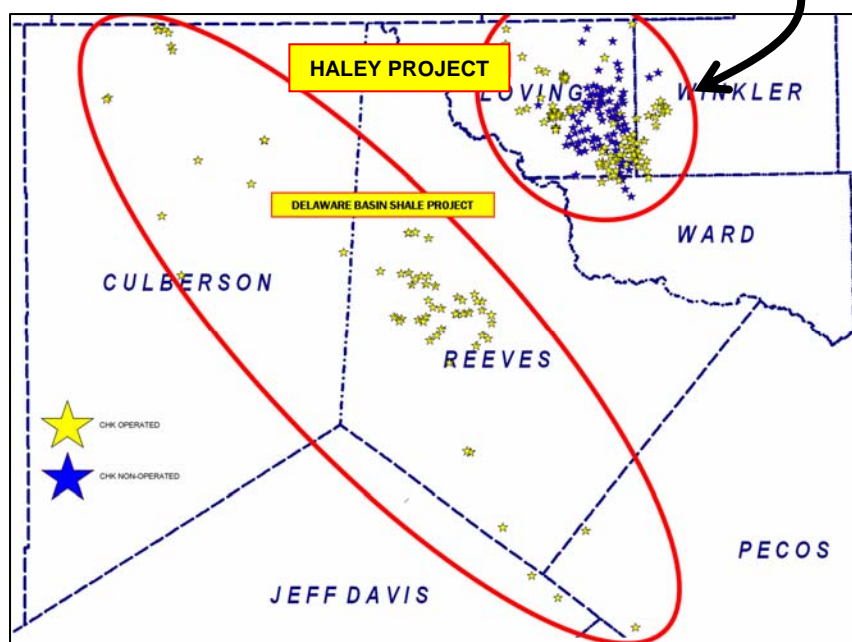


- Bossier Sands are primary objectives
- CHK's ~380,000 net acres of leasehold also have excellent resource potential in the Travis Peak Sands and James Lime horizontal development
- Recently acquired 454 square miles of 3-D seismic with another 300 square miles by Q1'09
- Currently have 2 rigs drilling Deep Bossier and will spud first deep exploratory well using newly acquired 3-D in Q4'08
- Other area operators include Encana, ConocoPhillips (Burlington), Anadarko and Gstar

# Deep Haley Play – West Texas



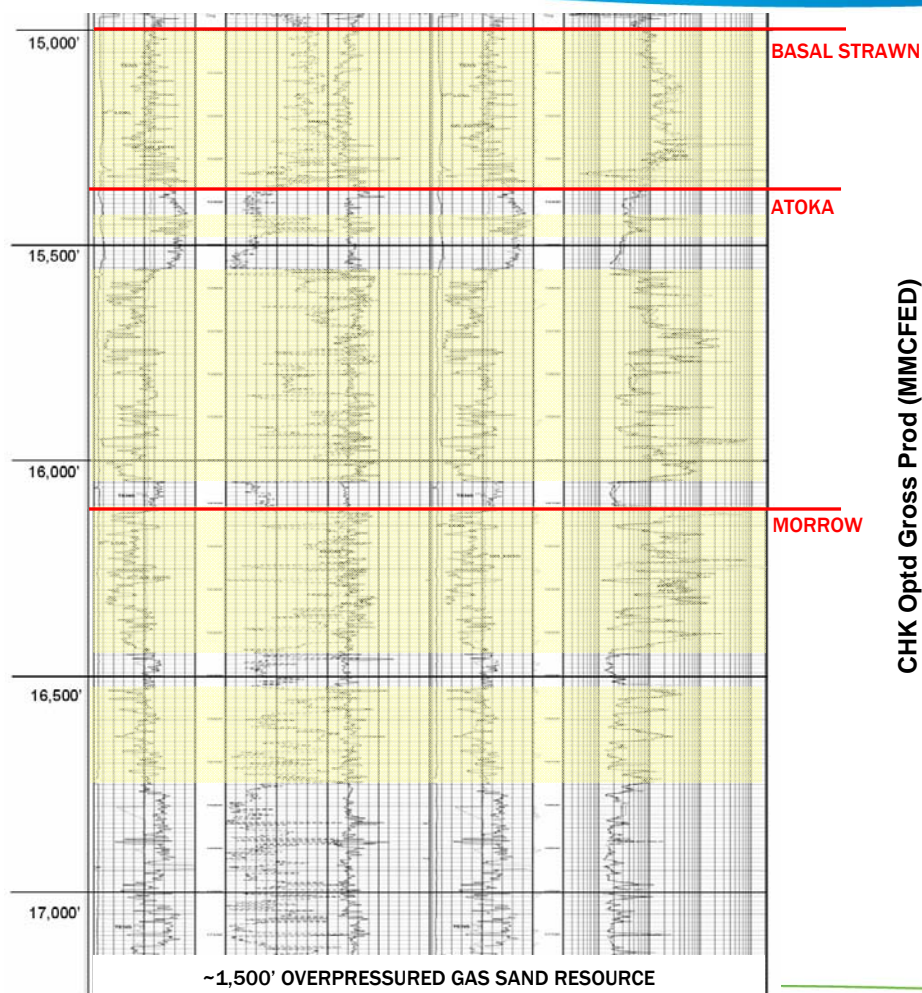
## DEEP HALEY PROJECT



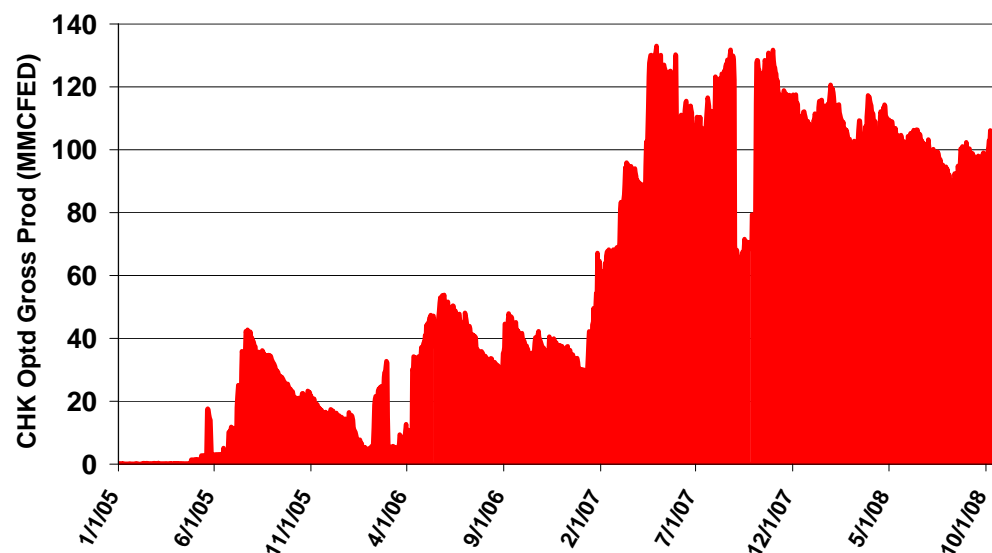
- Atoka and Morrow Sands are primary targets
- CHK has ~500,000 net acres of leasehold in the play
- Current net production of ~85 mmcfe/day
- Currently have 5 operated and 5 non-operated rigs drilling
- Targeting 6.0 bcfe for \$12 mm well cost
- Most recent operated well averaged 14.5 mmcfe/day for first 30 days with EUR of 12 bcfe
- Other area operators in the area include Anadarko (50/50 JV on a 437,000 net acre area) and Cimarex
- Within the block have identified 1 additional target formation as a potential resource play



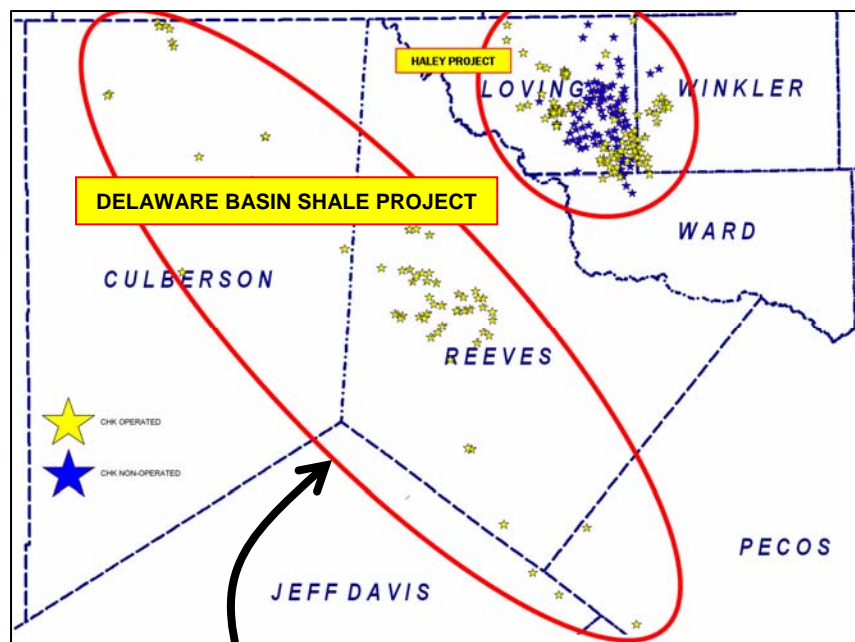
# Deep Haley Play – Type Log and Gross Production Profile



Deep Haley Project  
Chesapeake Operated Gross Production



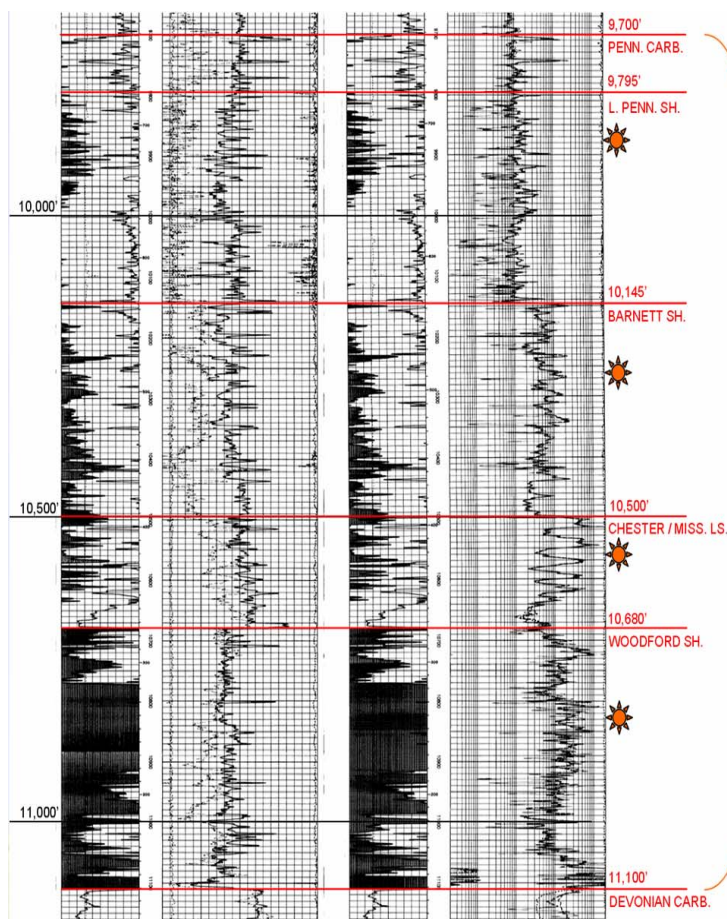
# Delaware Basin Shale Play West Texas



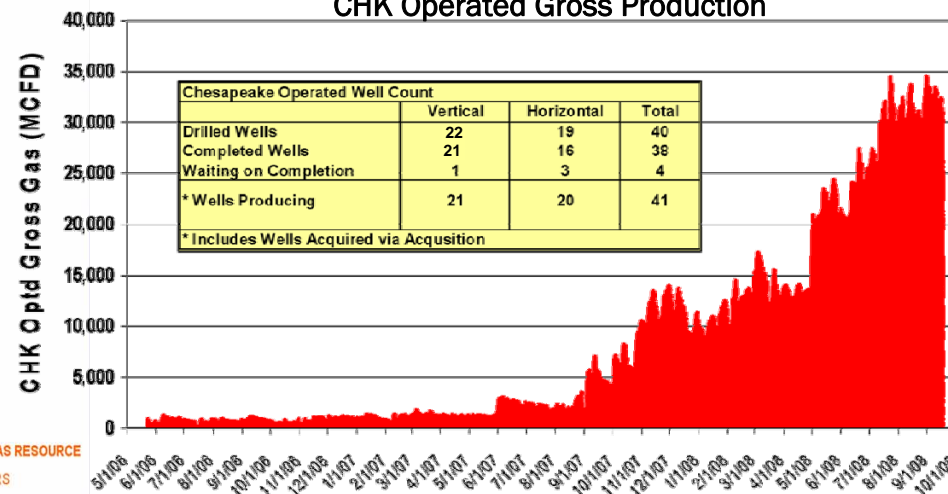
DELAWARE BASIN SHALE PROJECT

- Barnett and Woodford Shales have been the primary targets to date
- CHK has ~1.2 million net acres of leasehold in the play
- CHK has completed 21 vertical and 16 horizontal wells in the play
- Current net production is 25 mmcfe/day
- Currently have 5 operated rigs drilling
- Most recent completion is best one so far
  - Horizontal Woodford with Penn/Barnett at 5.2 mmcfe/day average for first 30 days with EUR of 7.6 bcfe
- Targeting \$8.0 mm to find 4.0 bcfe for horizontal Woodford wells, but still working on getting costs down, defining the sweet spots and improving completions
- Within the acreage block have identified four additional potential gas resource or tight gas objectives
  - Will be testing these other play concepts during next 12 months

# Delaware Basin Shale Play Type Log and Net Production Profile



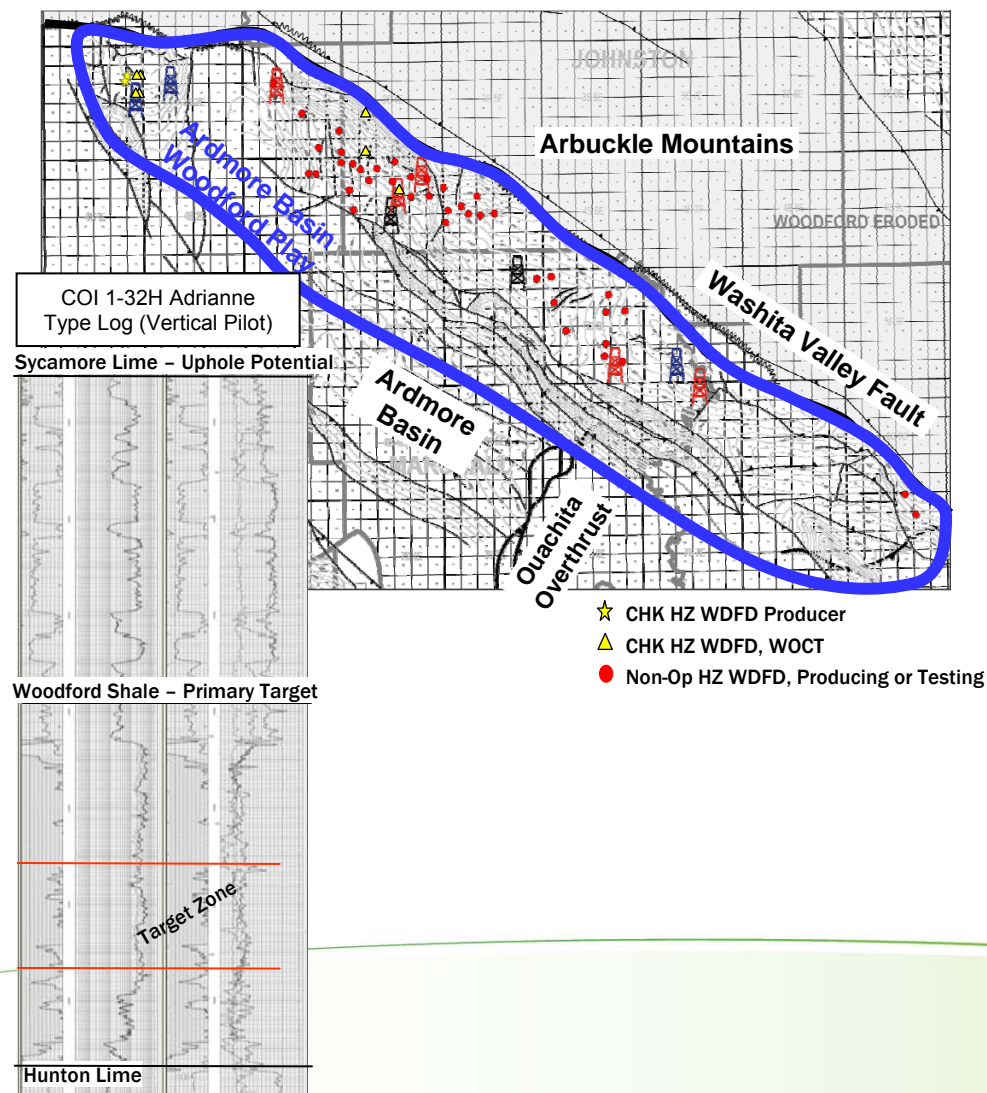
CHK Operated Gross Production



- Thick, thermally mature, high TOC stacked shale gas reservoirs
- Woodford, Barnett & Pennsylvania Shale targets
- Up to 1,500' of gross resource thickness
- 5.0% - 7% average porosity
- 8,000' 15,000' TVD
- 5.0% - 7.5%

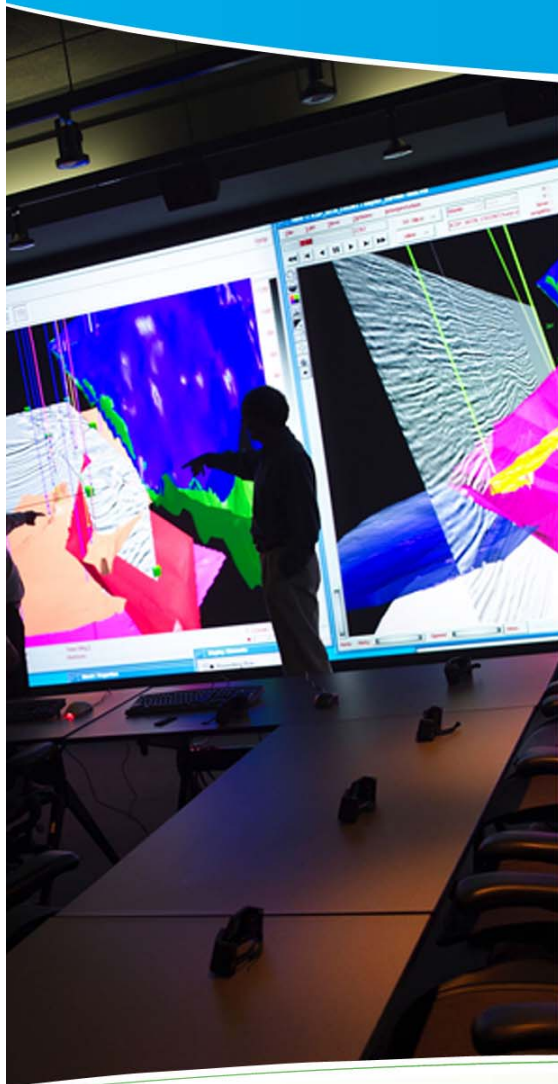


# Ardmore Basin Woodford Shale Play Southern Oklahoma



- CHK has 230,000 net acres of leasehold in the play
- CHK has drilled 9 horizontal Woodford Shale wells to date
- 2 rigs currently drilling horizontal wells
- 3 operated horizontal wells currently producing ~5 mmcf/day, with average EUR's of 2.5 bcfe and average well costs of \$5.5 mm
- Other operators actively drilling Woodford horizontals include Bankers, Range, Wagner and Brown, XTO and Antero
- Potential uphole targets give added play potential

# Other Shale Plays



- Have acquired ~700,000 net acres on six additional shale resource plays in five states
- Of these 6 plays, 3 are currently drilling or testing our first horizontal wells and the other 3 should spud initial horizontals within the next 6 months
- Very strong oil component to these new unidentified plays
- Through the leadership of our Unconventional Resources Group, our Petrophysical Group, and the CRTC, CHK has several other unconventional and shale plays currently undergoing research and evaluation
- We are confident that we have the scientific and technological talent in place to continue feeding our drilling machine with new plays for decades to come

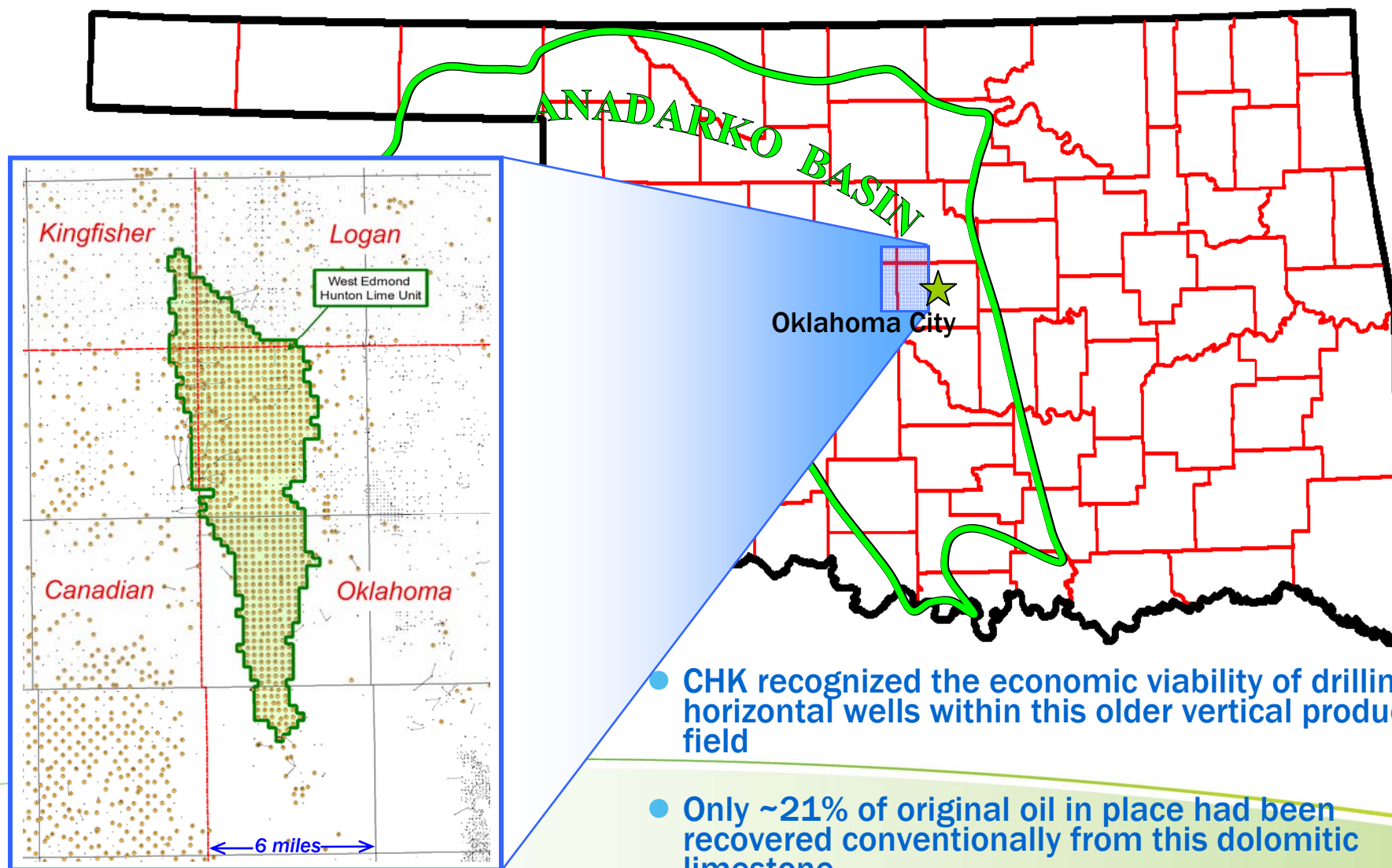
# Other Unconventional Plays



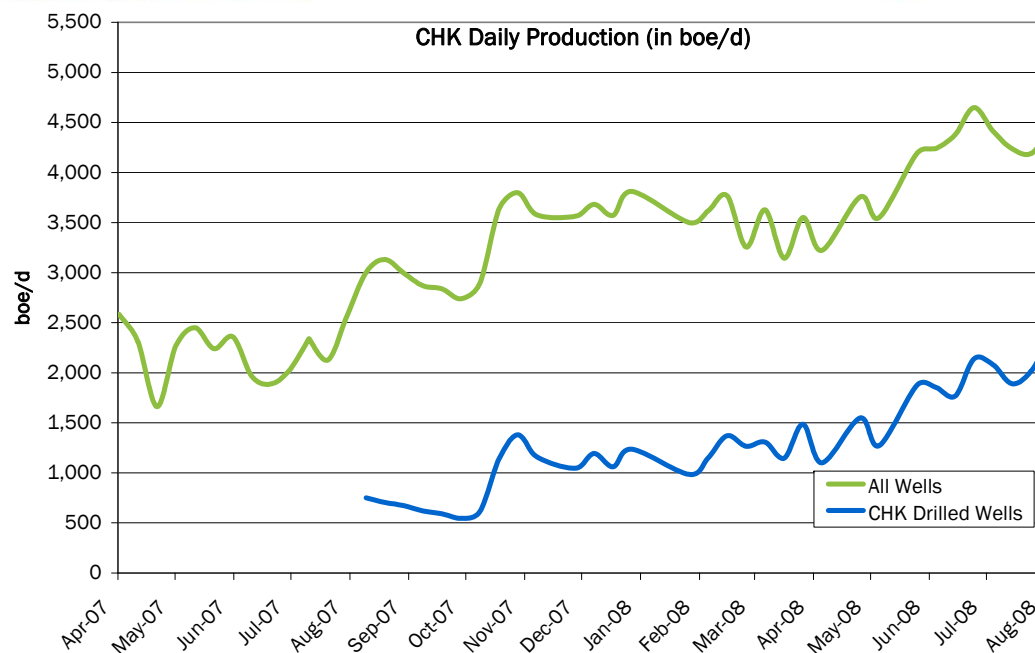
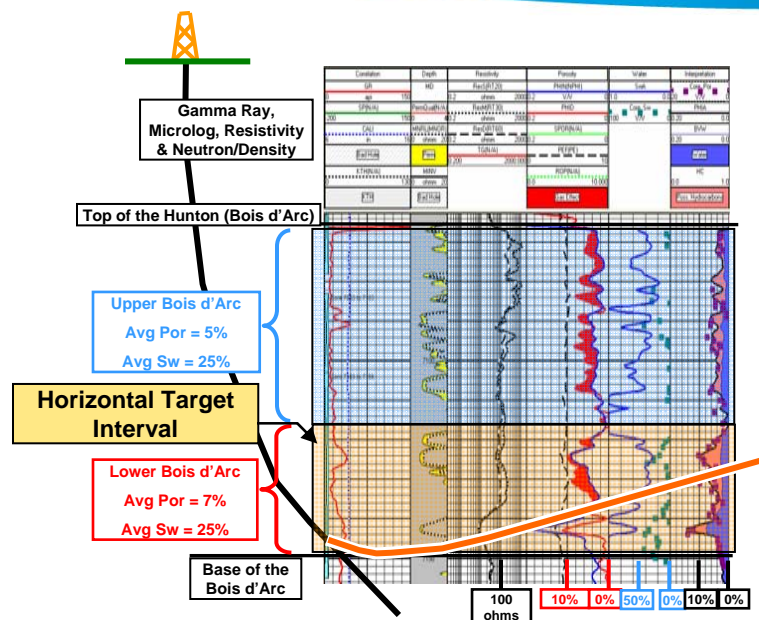
- CHK recognizes that other formations in addition to organic shales are conducive to elevated economic viability through horizontal drilling technology, including tight sandstones, siltstones, limestones and dolomites
- To date, Chesapeake has either drilled or plans to drill horizontal wells in more than 15 different formations in addition to our shale plays
- Depths range from 2,600' to 17,000' (TVD)
- Although we can not disclose most of these plays today for competitive reasons, we are disclosing two of these plays on which we've drilled several successful horizontal wells to date



# West Edmond Hunton Lime Unit (WEHLU)

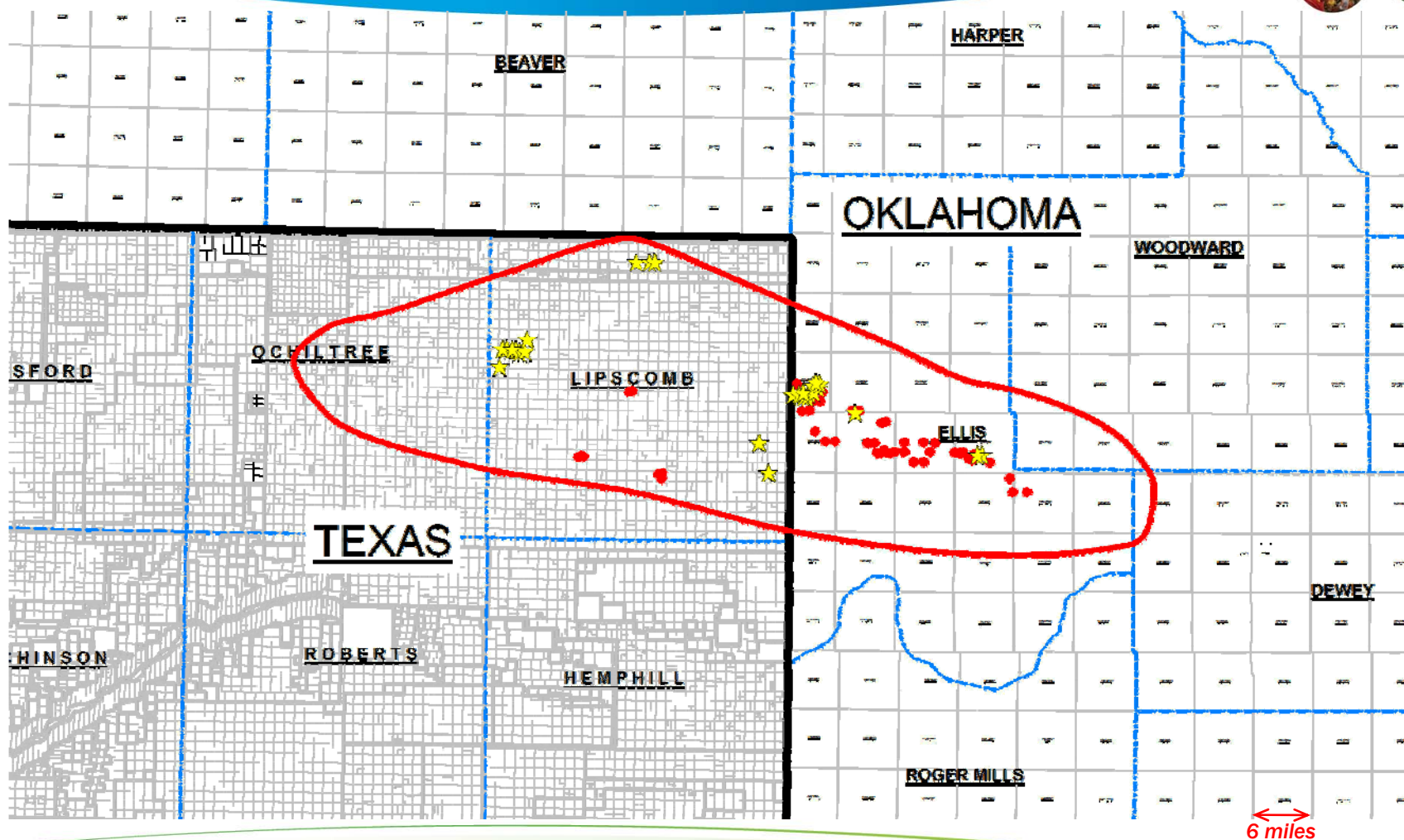


# West Edmond Hunton Lime Unit



- CHK has completed 8 horizontal wells to date at an average cost of \$4 mm and average EUR of 328 mboe for a finding cost of < \$16/boe and ROR of 233%
- CHK has 4 wells in various stages of completion and two rigs actively drilling
- CHK plans to ultimately drill 60+ horizontal Hunton wells in this play over the next 4 years
- The other primary operator in the play is Petrohawk

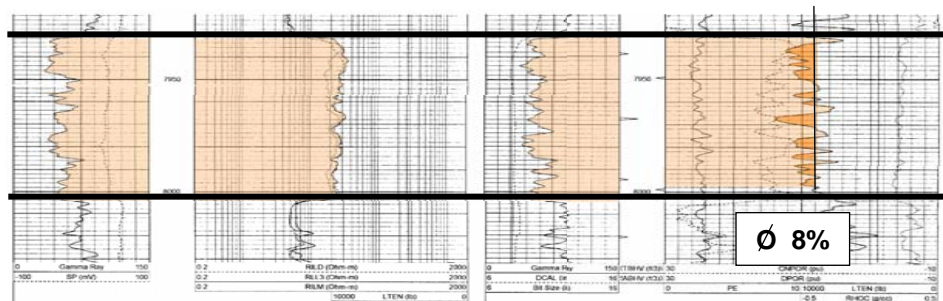
# Cleveland Sand Horizontal Play Oklahoma/Texas Panhandle



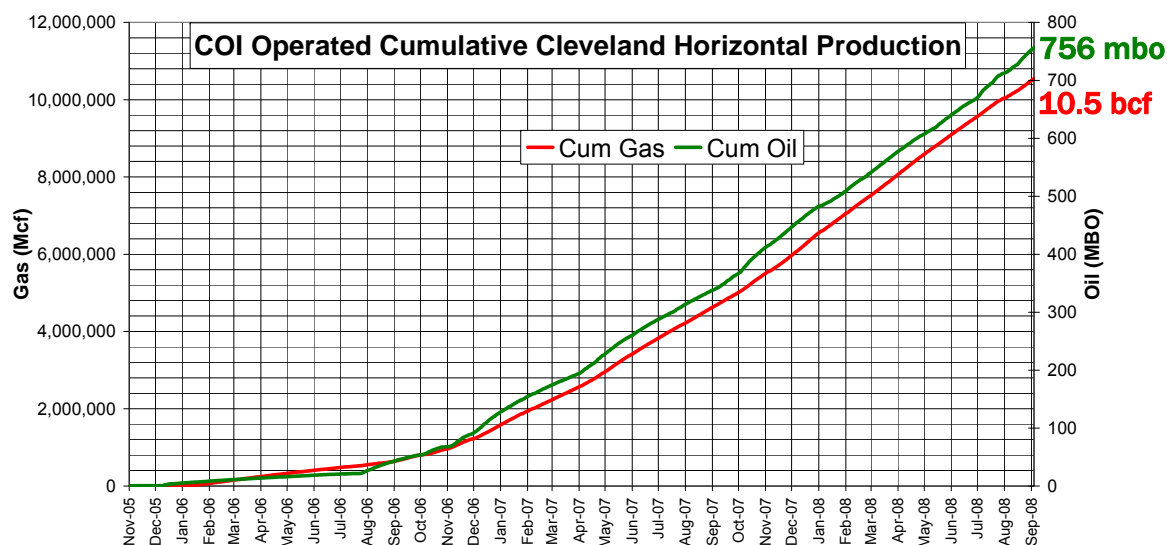
- ★ CHK OP
- CHK Non-OP



# Cleveland Sand Horizontal Play



TYPE LOG

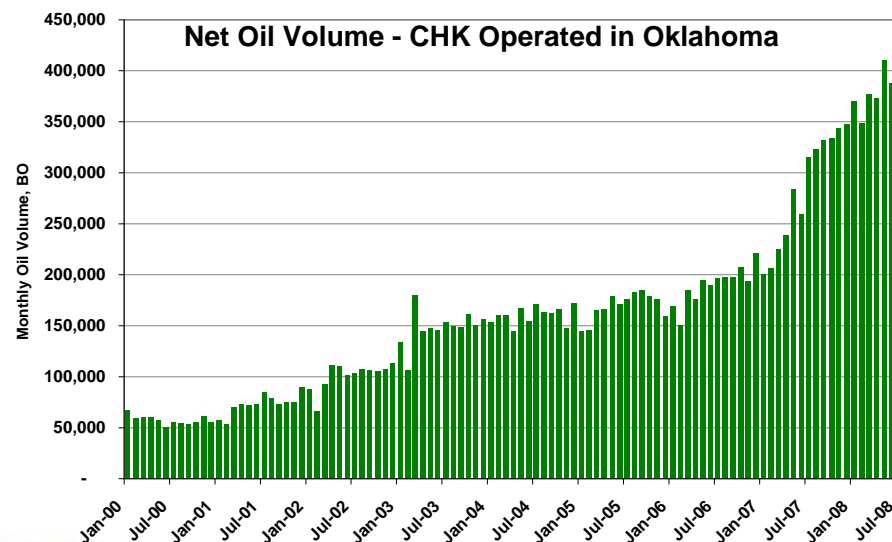
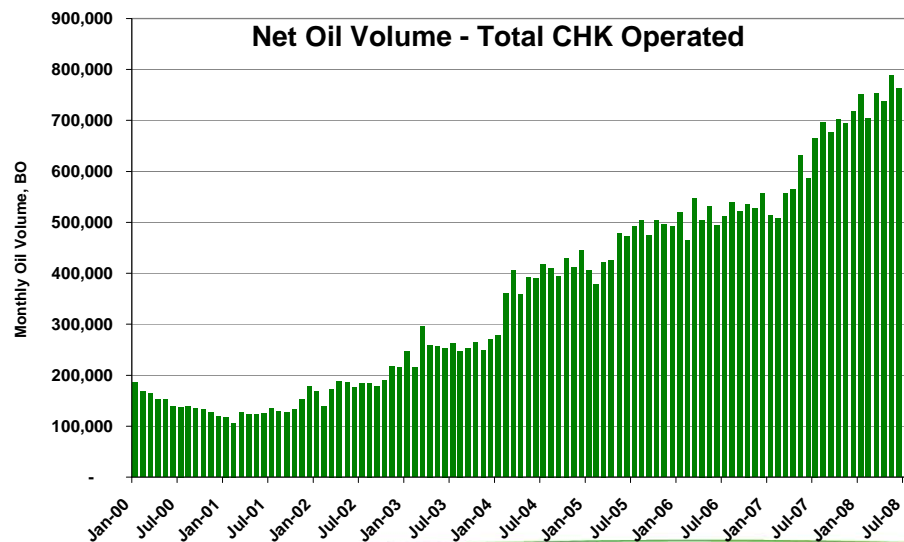


- Low permeability silty sand
- Average thickness of 50'
- 24 operated producing wells, 2 completing, 2 drilling
- Current daily production from 24 CHK wells of 1,728 bbls/day and 17 mmcf/day
- Average economics: 120 mbbbls and 2.3 bcf for \$3.50 mm well cost for a finding cost of ~\$1.40/mcfe
- 120+ additional operated locations

# A Natural Gas Company with Oil Production Too!



- Amid a tremendous ramp-up of natural gas production from our shale resource plays, oil remains an important part of our production mix at 8%, with the goal of increasing over time
- With the help of horizontal plays such as the Colony Wash, WEHLU, and the Cleveland Sand, CHK is now the largest producer of oil in Oklahoma
- CHK currently produces ~ 33,000 bbls/day with more than half of that coming from Oklahoma





# 3-D Plays and Prospects

Larry Lunardi, VP - Geophysics

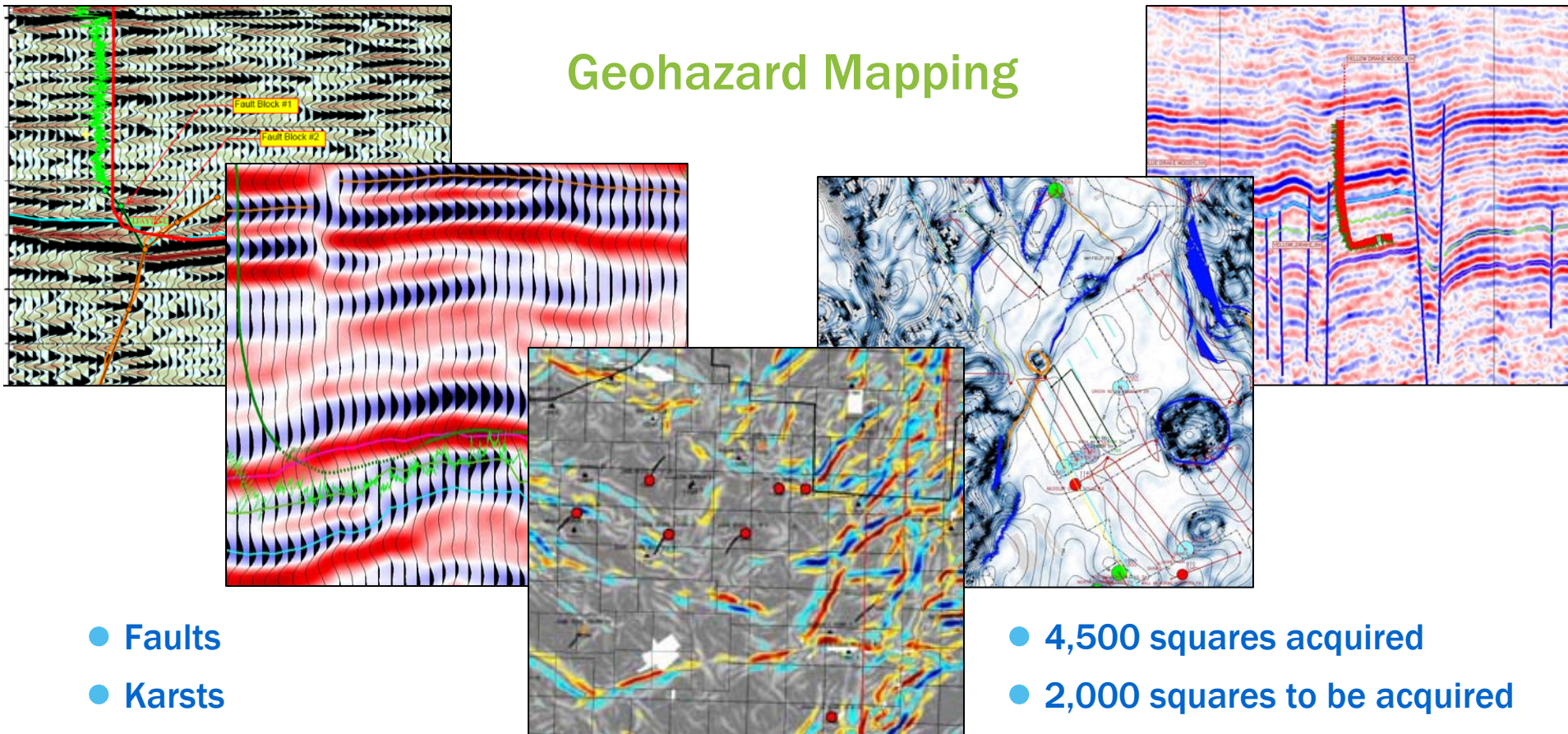




# Unconventional Plays



## Geohazard Mapping

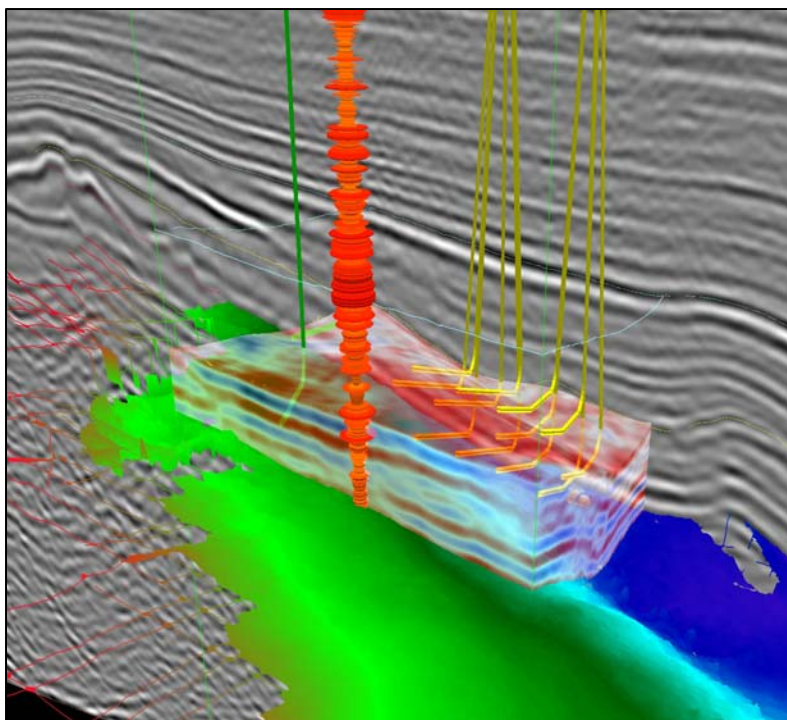


- Faults
- Karsts
- Dip Changes

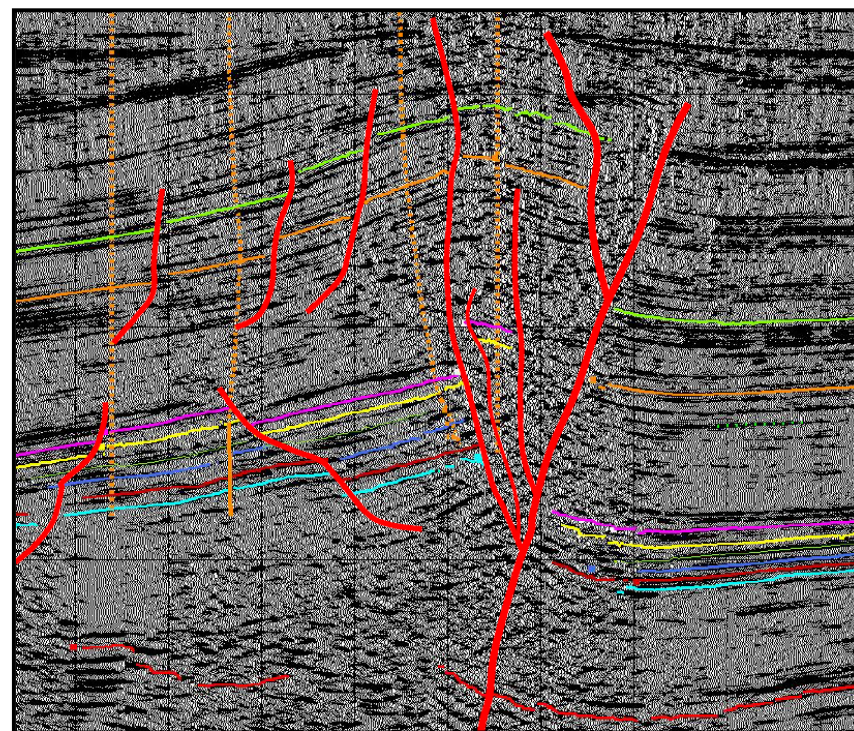
- 4,500 squares acquired
- 2,000 squares to be acquired through 2009



# Southern Oklahoma Cement Field



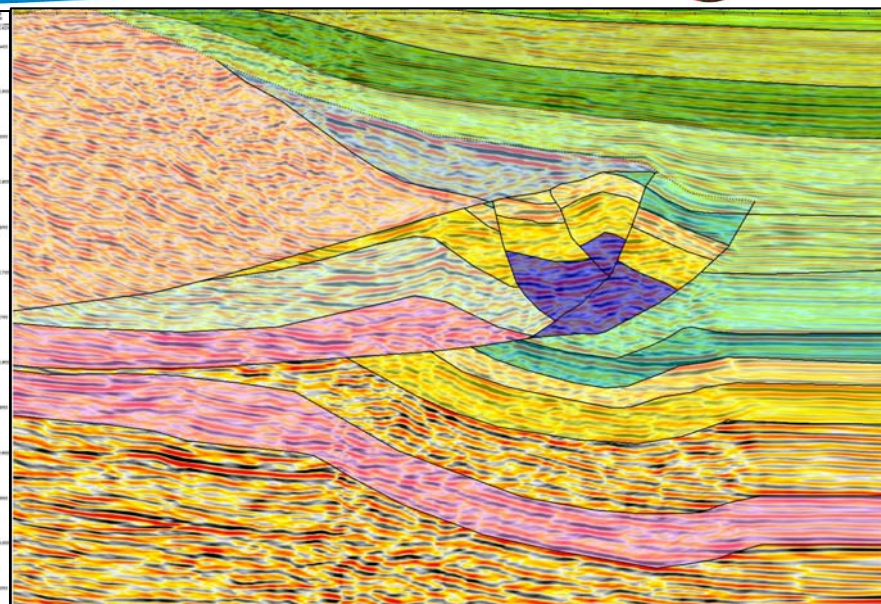
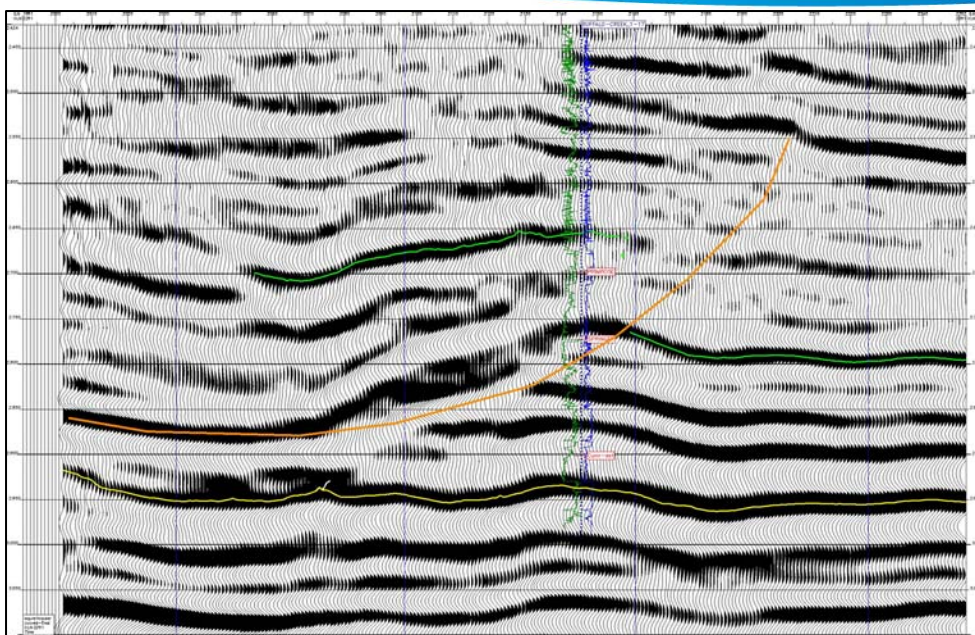
- Complex structure
- 2,500 squares acquired to date
- Over 300 wells drilled since '96



- Latest completion has 4 Pennsylvanian sand pays with anticipated initial rate of 20 mmcf/day



# Wichita Mountain Front Washita, Beckham, Kiowa Counties, OK

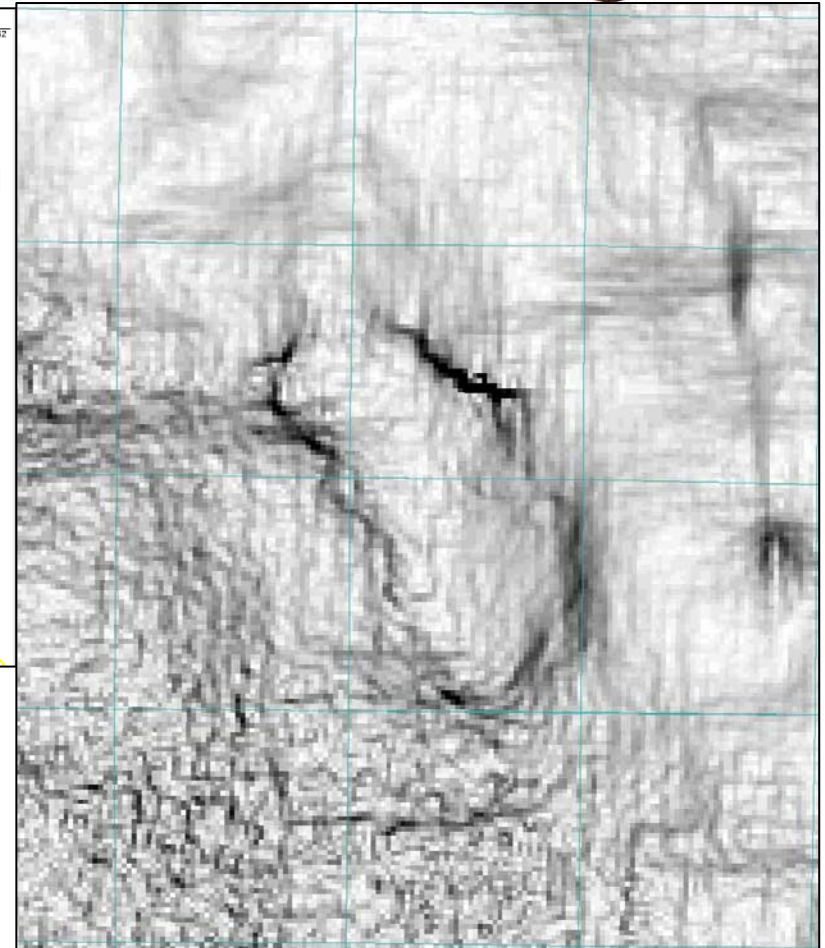
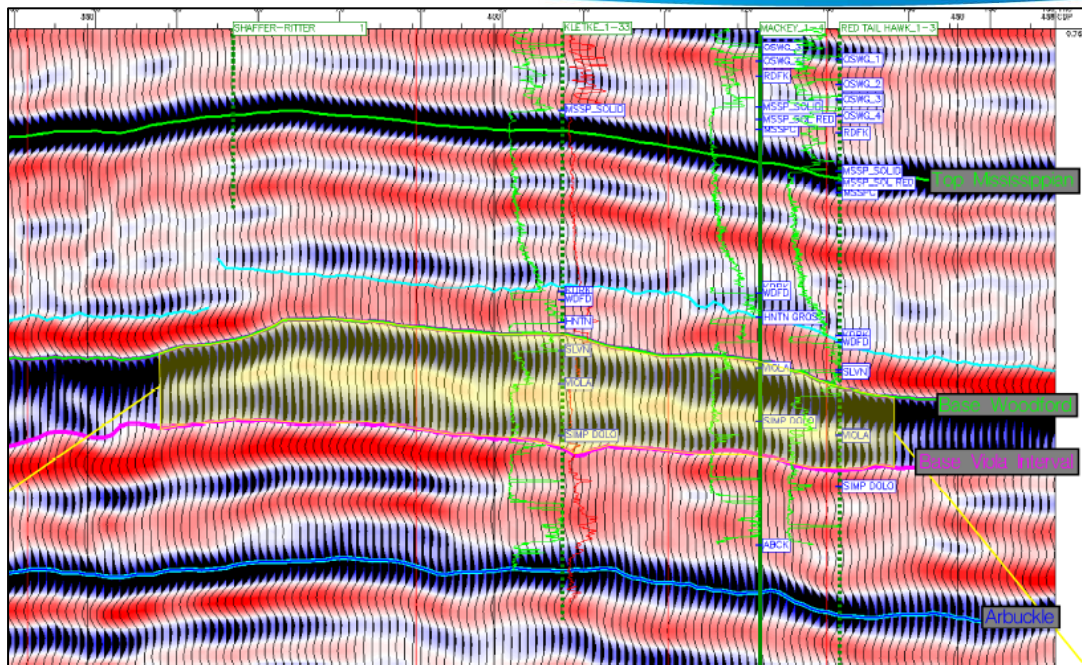


- **Complex structure**
- **Multi-pay deep targets (@ 20,000'+)**
- **3-D seismic imaging challenges**

- **Best well to date:**
  - Buffalo Creek 1-17 has produced over 50 bcfe since '02 with an EUR of 62 bcfe
- **Analog prospect along trend currently drilling**
- **Total play PDP reserves: over 300 bcfe**

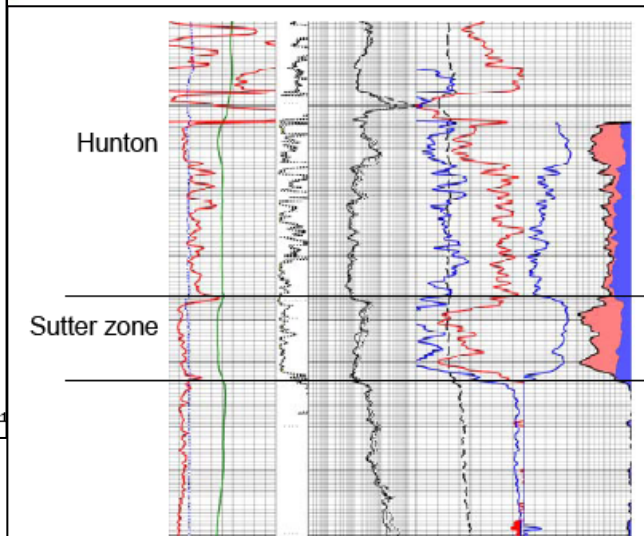
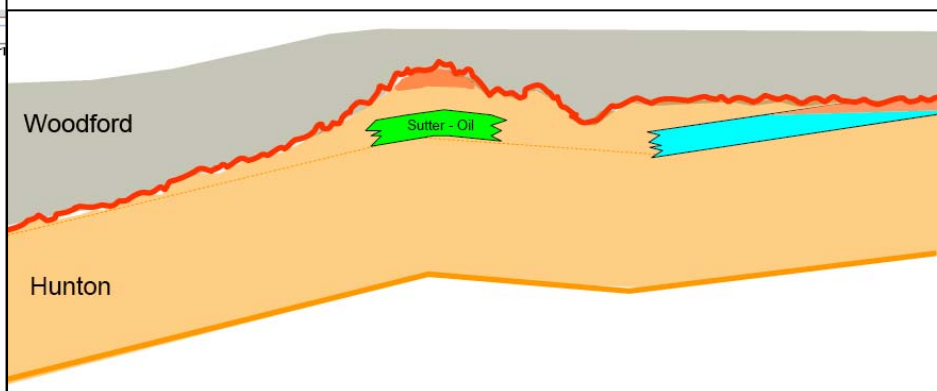
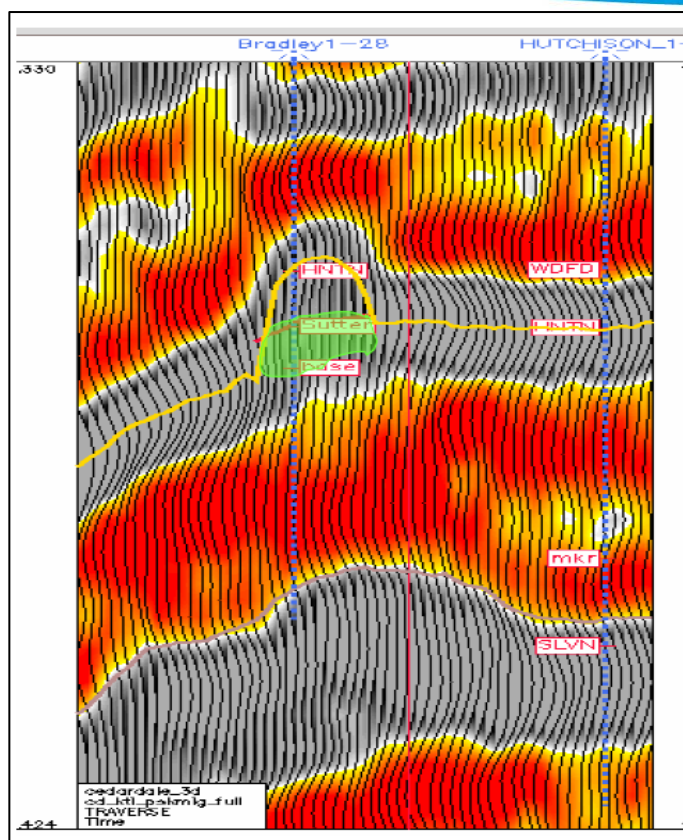


# Anadarko Shelf Seis-Strat



- Hunton erosional remnants outlined by 3-D
- Multi-well oil field discovery
- Additional potential in Mississippi, Chester, and Red Fork

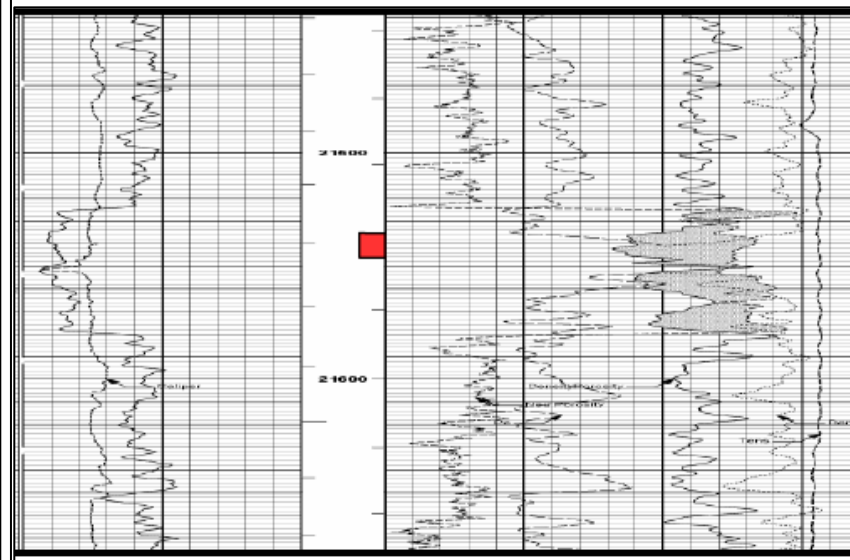
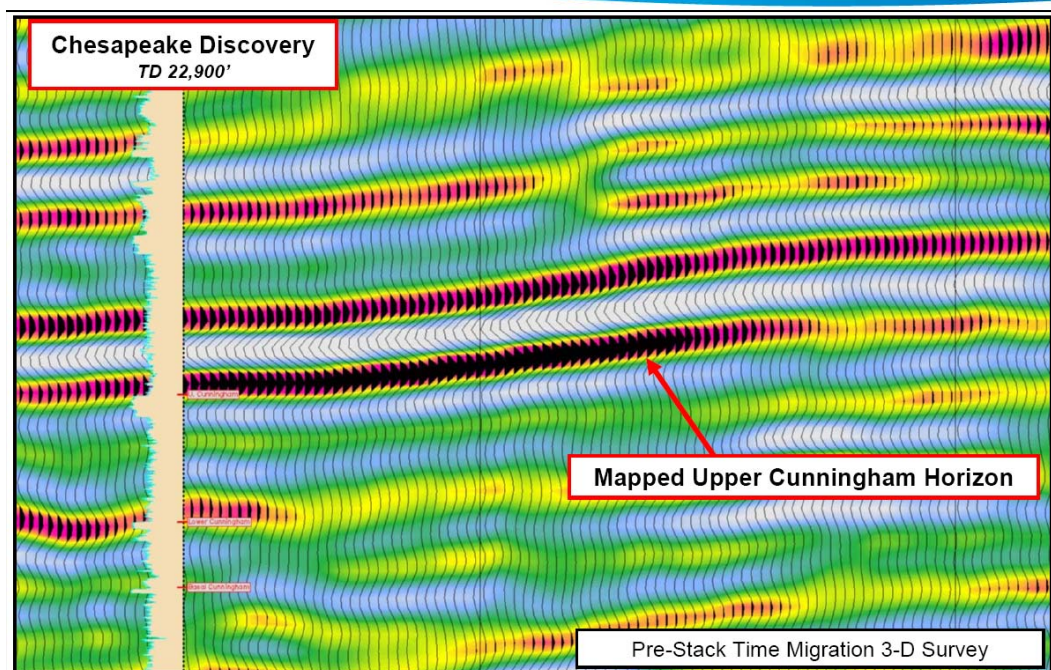
# Anadarko Shelf Seis-Strat – Sahara District Woods, Woodward, Major Counties, OK



- Hunton porosity pods delineated by 3-D seismic data
- Per well reserve potential up to 750 mmbbls
- Multiple discoveries made since '06
- 250 square miles of 3-D seismic data acquired to date



# Deep Anadarko Seis-Strat Washita and Caddo Counties, OK



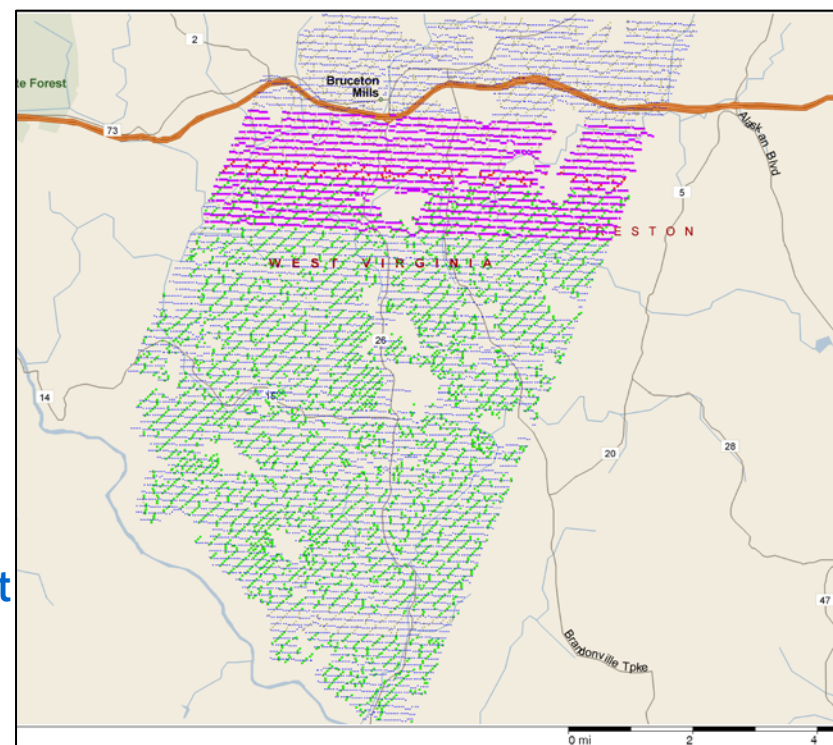
- 3-D defined Pennsylvanian sand reservoirs
- Primary targets below 20,000'
- Significant per well reserve potential
- Typical prospect size: 5,000-10,000 acres

- Recently completed wildcat encountered 3 Pennsylvanian sand pays
- At least 10 additional offset locations
- 5 additional prospects defined and leased



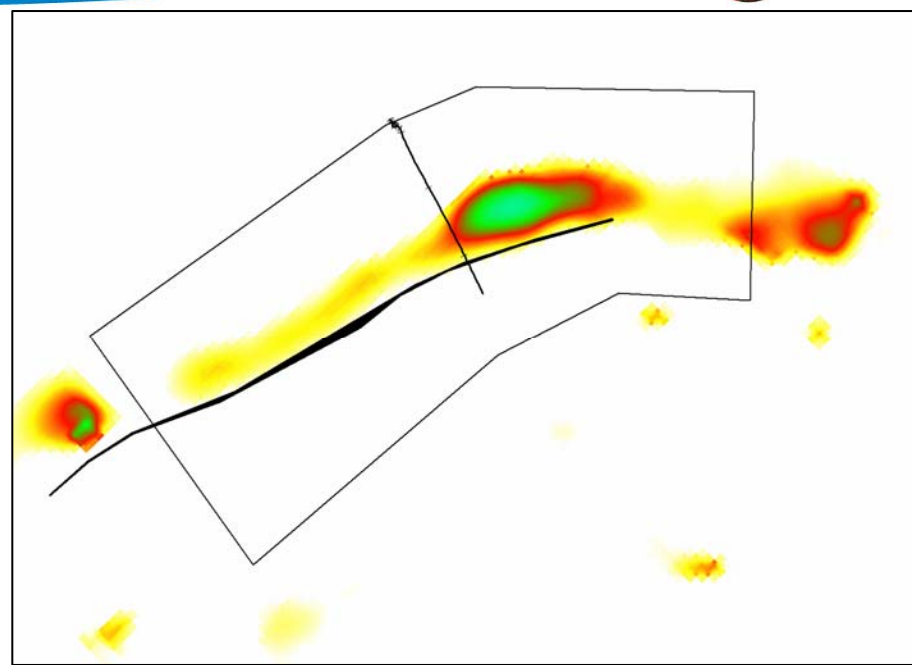
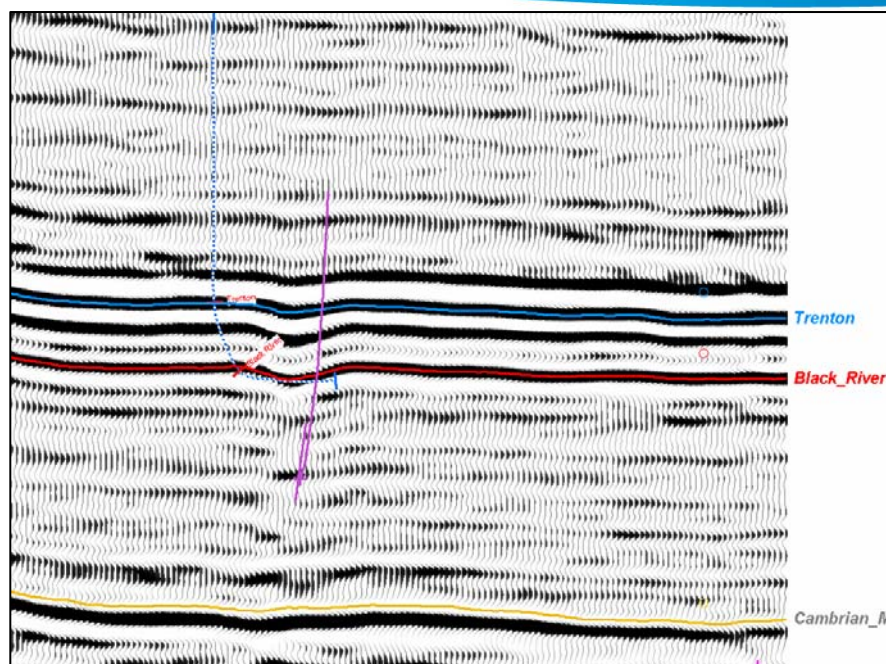


- Over 500 square miles of 3-D seismic data acquired to date
- Conventional and unconventional targets
- Significant topographic and cost challenges



- Just completed recording of latest 60 square mile survey in West Virginia
- Up to 400 square miles of new surveys shooting planned for 2009

# Trenton-Black River Play New York and Pennsylvania

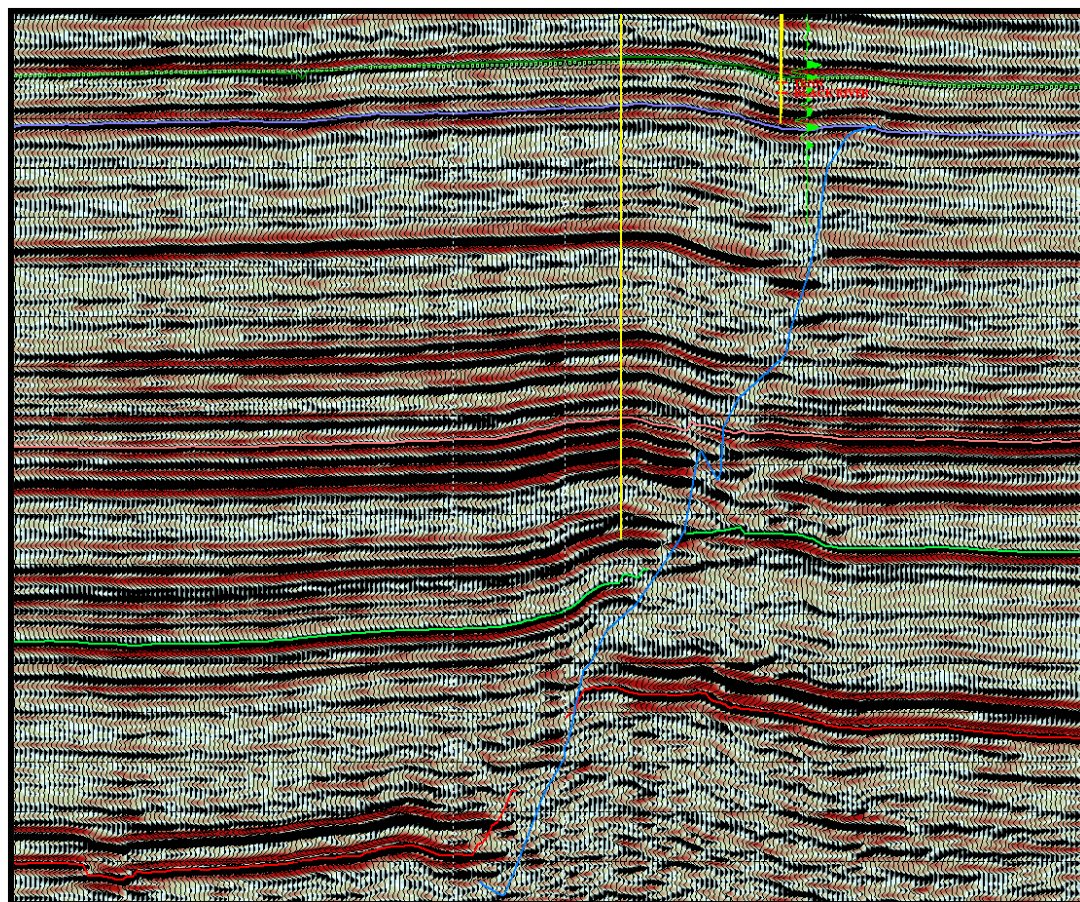


- Targeting hydrothermal dolomite reservoirs developed within narrow, discontinuous fault-bounded grabens
- 3-D seismic data critical to success

- First 2 horizontal wells in New York had initial tests of 10 mmcf/day
- First horizontal test in Pennsylvania encountered porous dolomite with strong gas shows (WOC)
- Up to 15 additional locations to drill



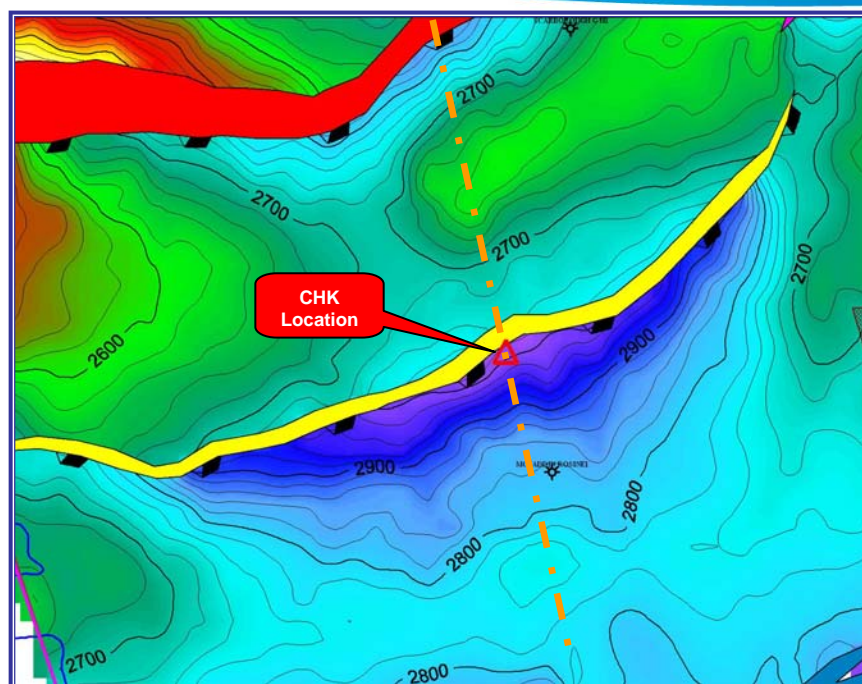
# Rome Trough Deep Play



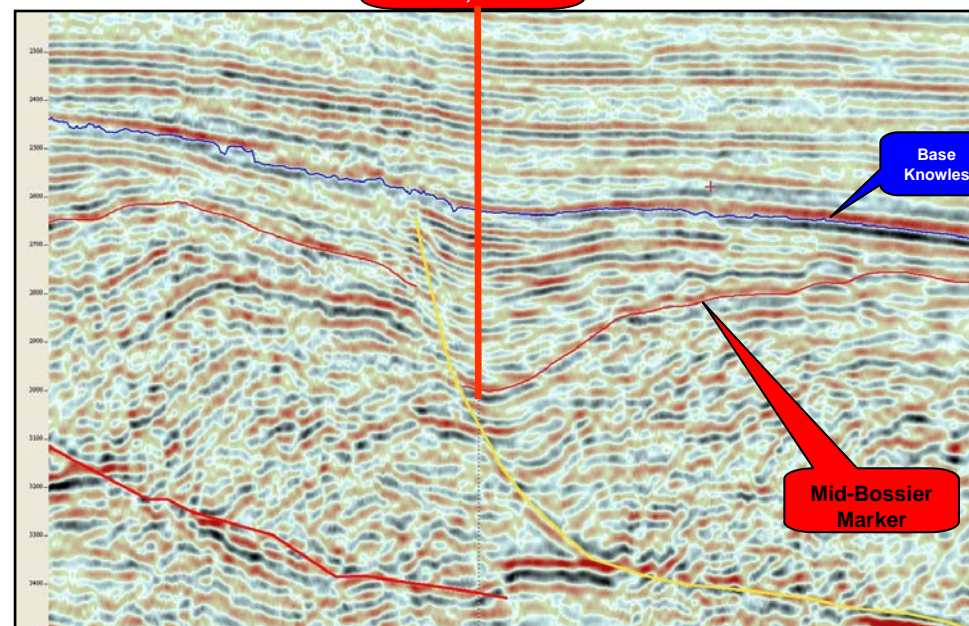
- Large, untested 4-way structural closures along major basement fault system
- 2 prospects now defined by proprietary 3-D seismic data
- Multi-pay potential below 20,000'
- Numerous other leads mapped via regional 2-D seismic data; now leasing
- First wildcat scheduled in 2009



# Deep Bossier Play – East Texas

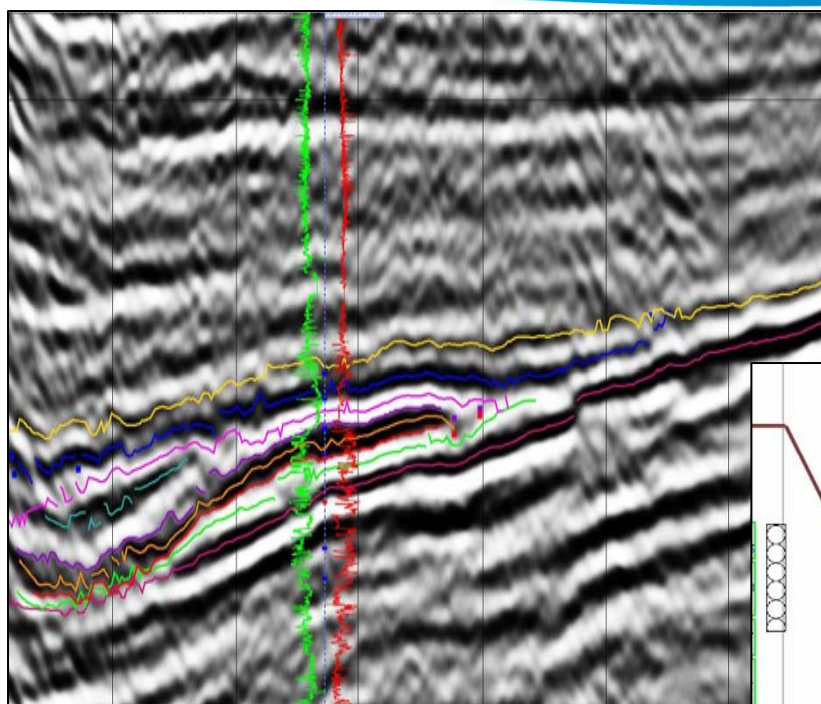


Mid-Bossier Marker Time Structure

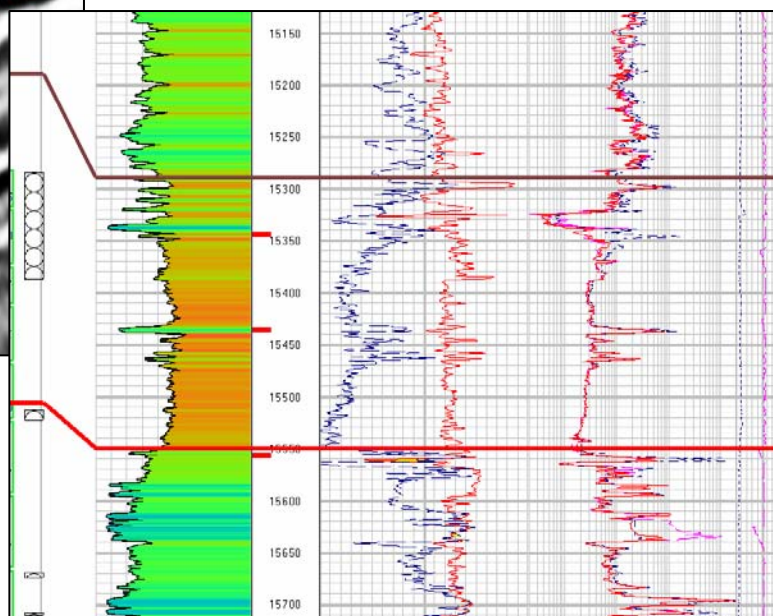


- Downthrown expansion faulting
- Analog producing wells flowing at rates up to 50 mmcf/day
- Prospect inventory on established acreage block in Houston County

# West Haley Area Reeves-Loving Counties, TX



- Atokan sand truncation traps
- New discovery tested at 15 mmcf/day
- Multiple offset locations
- Additional analog prospects

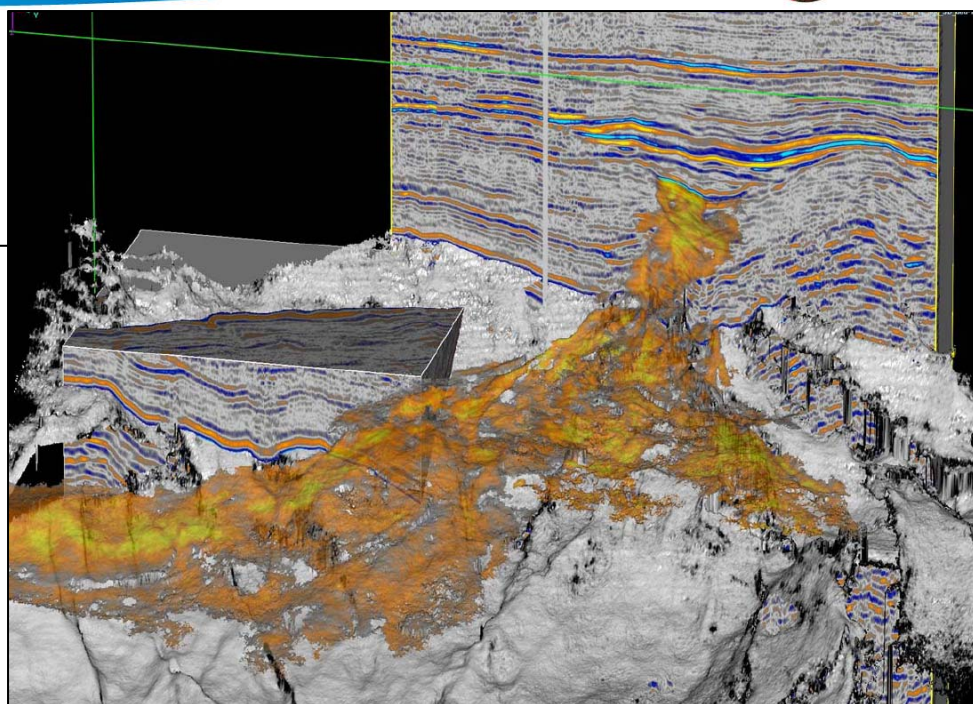
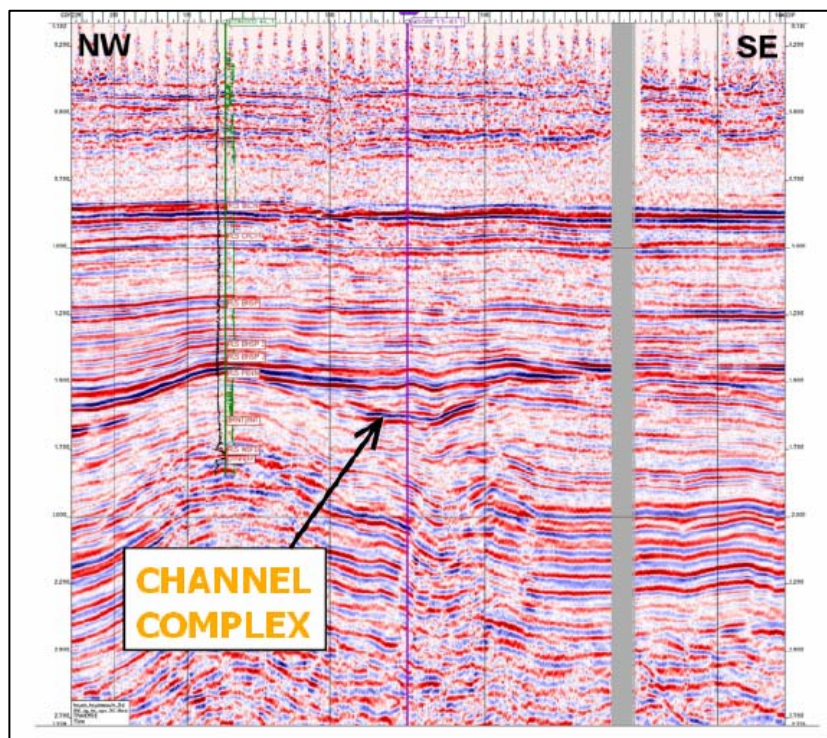




# Analog Granite Wash Prospect



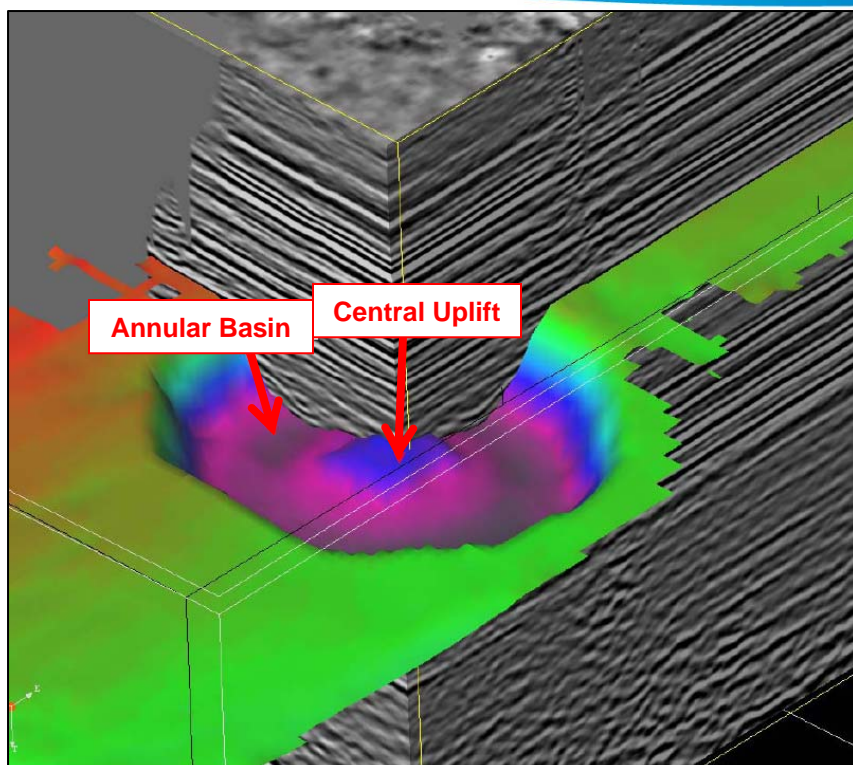
- 3-D seismic defined submarine fan complex
- Thick sand deposition covering large block of established leasehold



- Initial well currently drilling
- Analog production along trend



# Ordovician Impact Crater



- Over 2 miles across
- 1,000' deep
- 6,000' below surface

- Surrounding rock is proven local gas reservoir
- Analogous to known productive fields
- Initial well to drill 4Q'08

