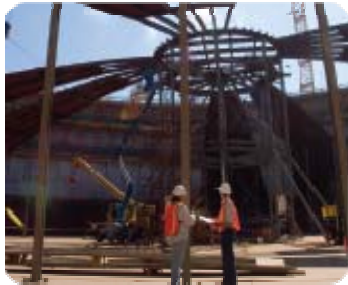


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## Near Term Outlook for the U.S. Natural Gas Market

**Lee M. Van Atta**

**Director**

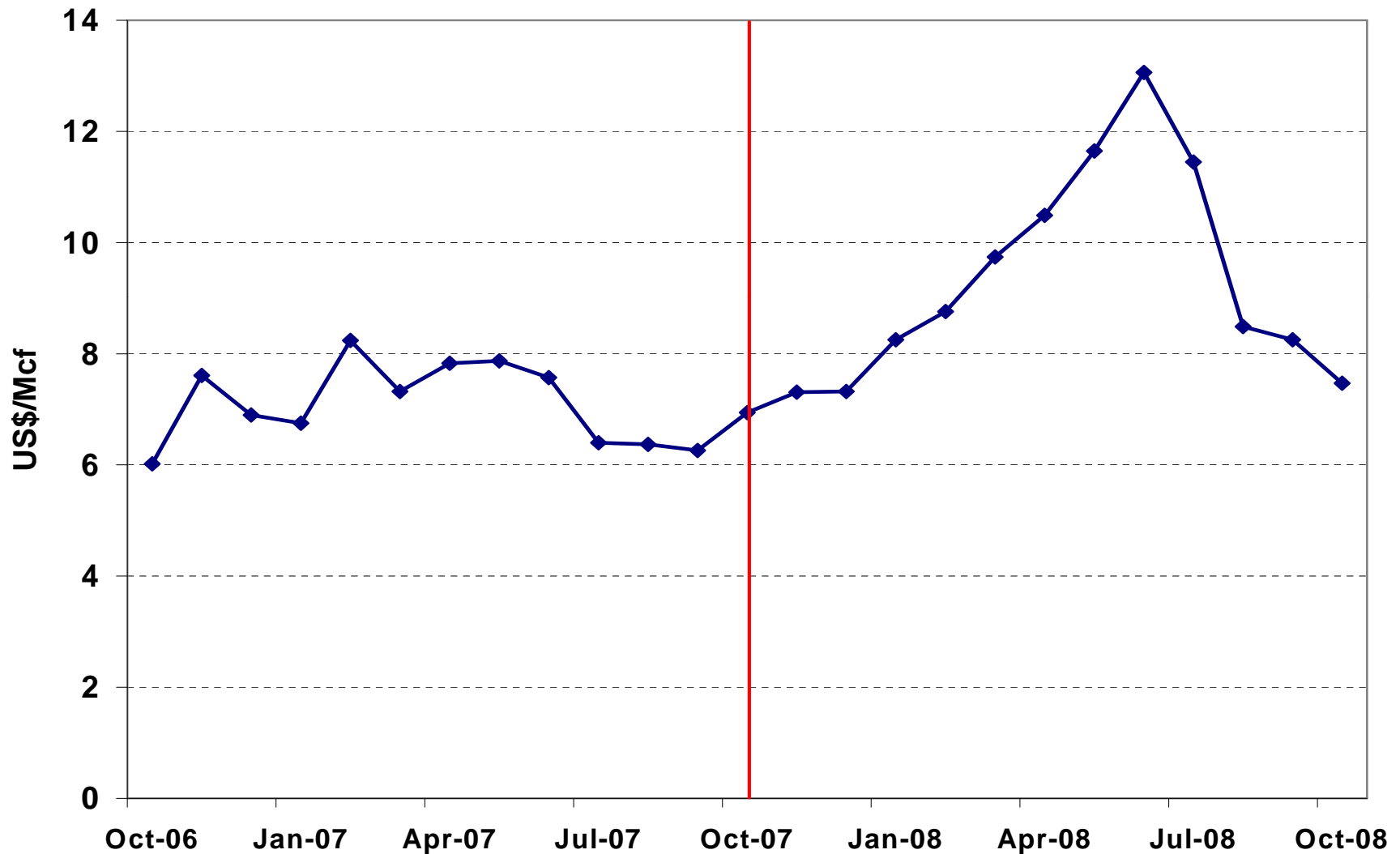
**Black & Veatch**

**October 7, 2008**

## Outline

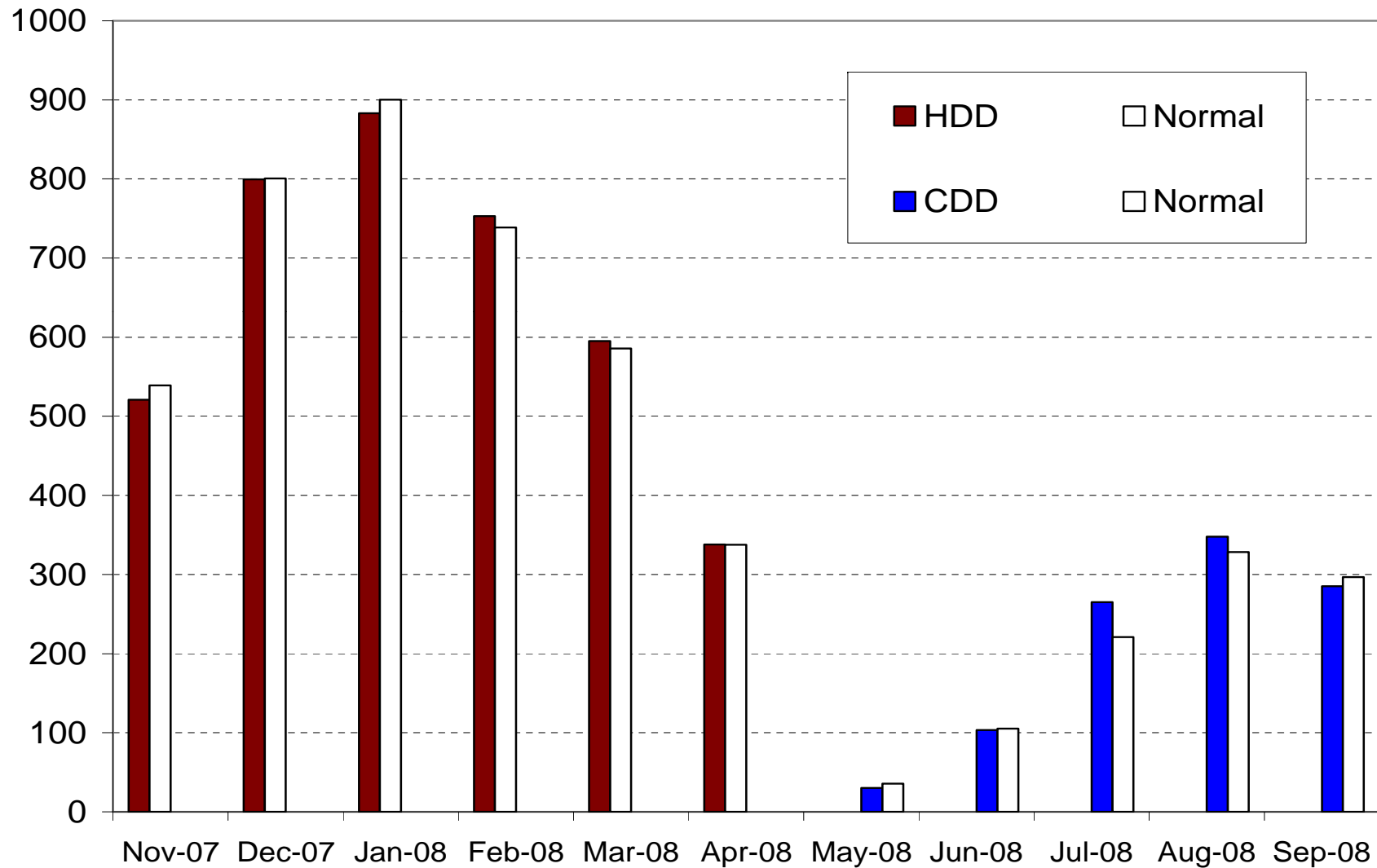
- 2007 - 2008 Market Review
- 2008 - 2009 Winter Outlook
- Conclusion

## Wild ride the past 12 months for U.S. natural gas prices



Source: EIA

## Review of Weather

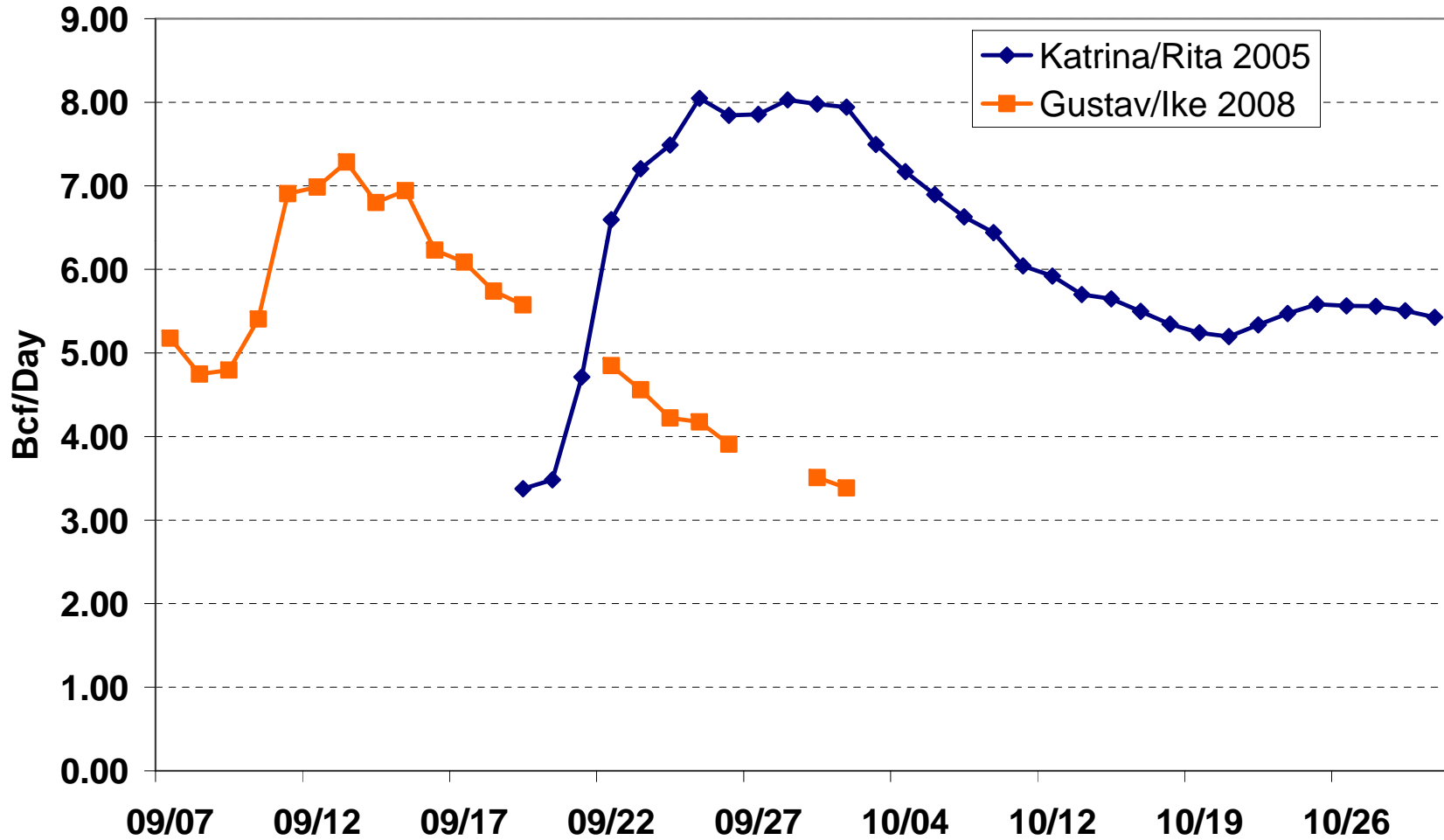


Note – Population weighted heating or cooling degree days.

Source: NOAA

# Review of Hurricane Impact

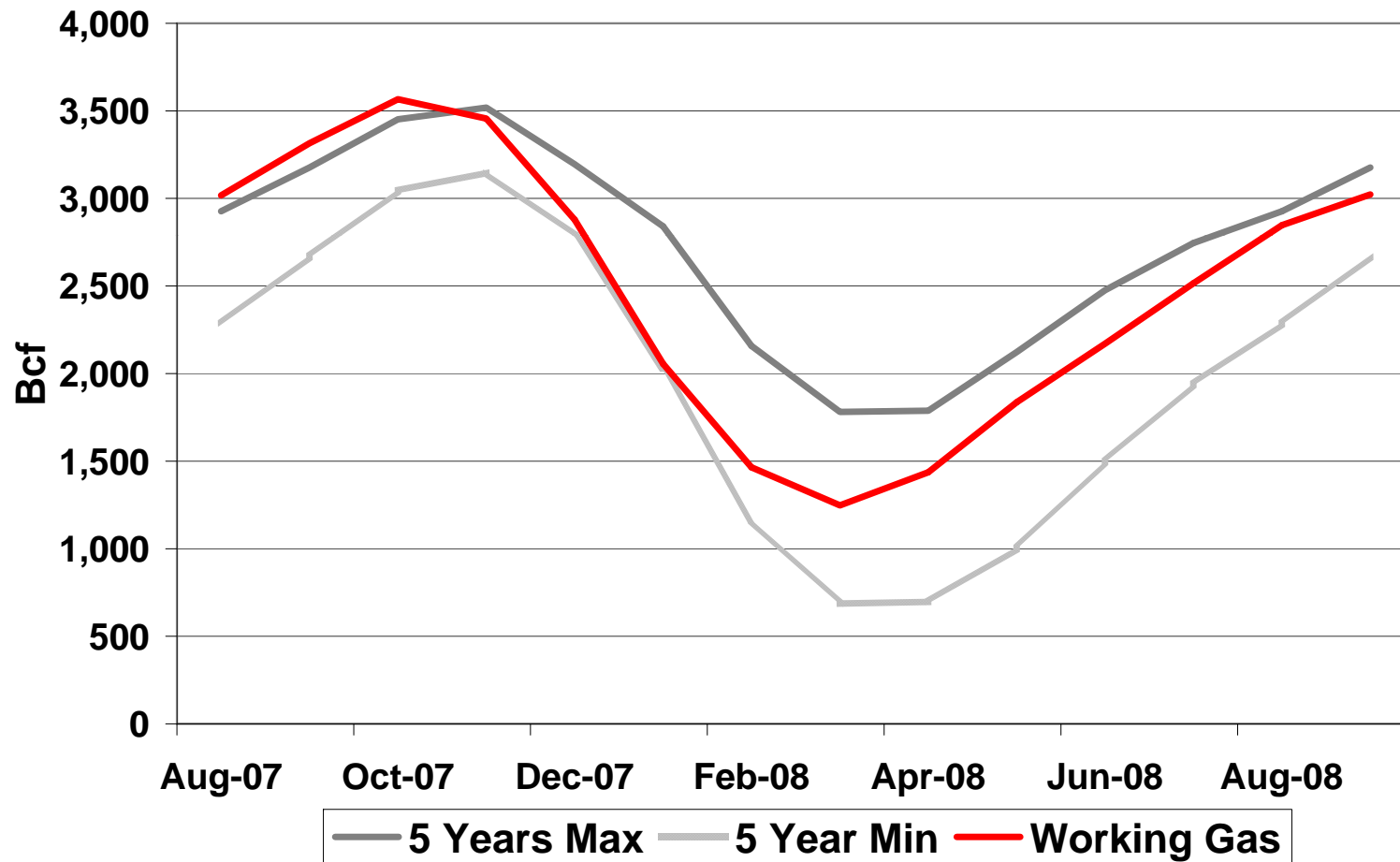
## Natural Gas Shut In during Hurricanes



Source: MMS

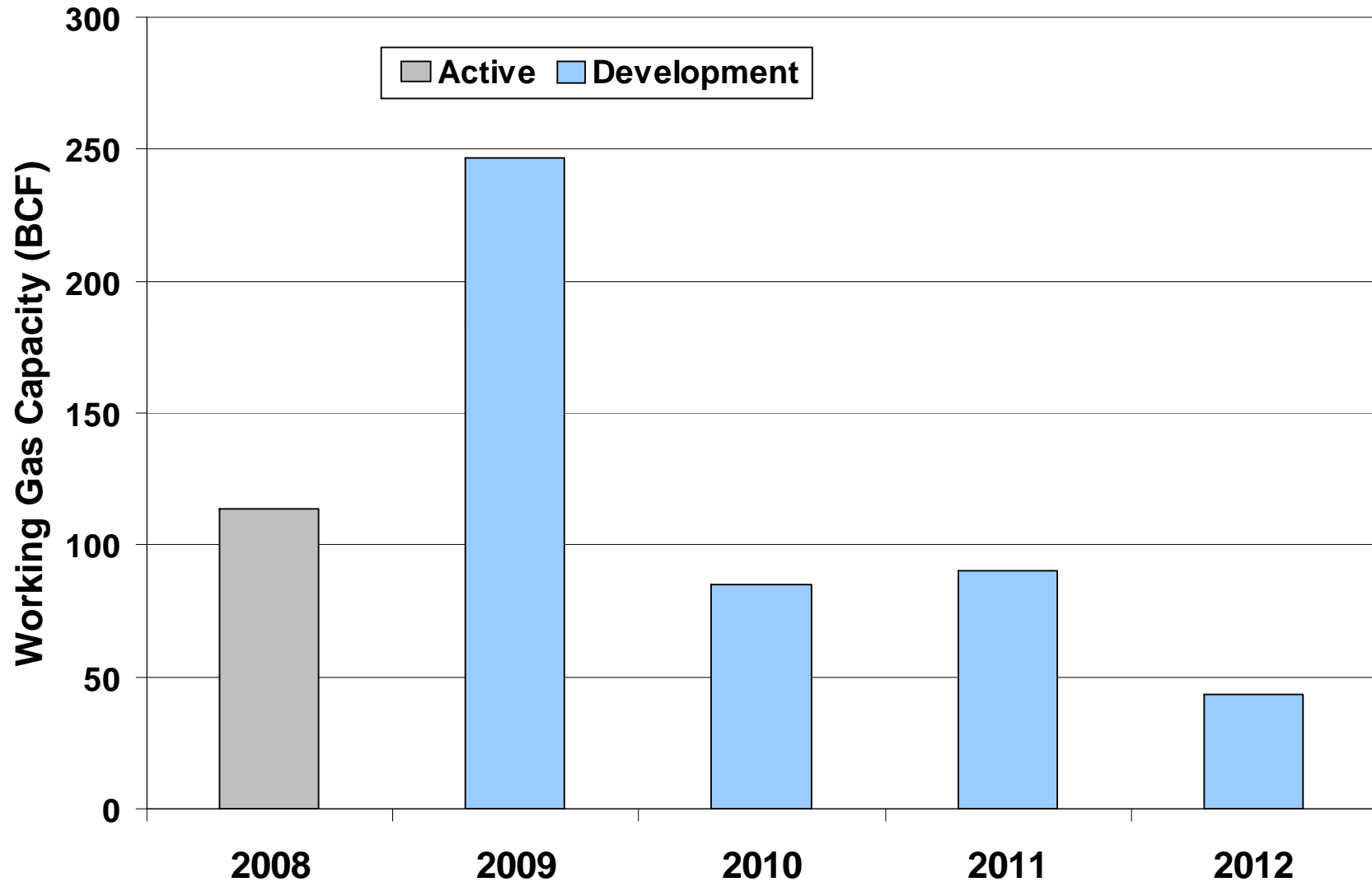
# Storage inventories have recovered but not a surplus

## Working Gas in Underground Storage 08/2007-09/2008



Source: EIA

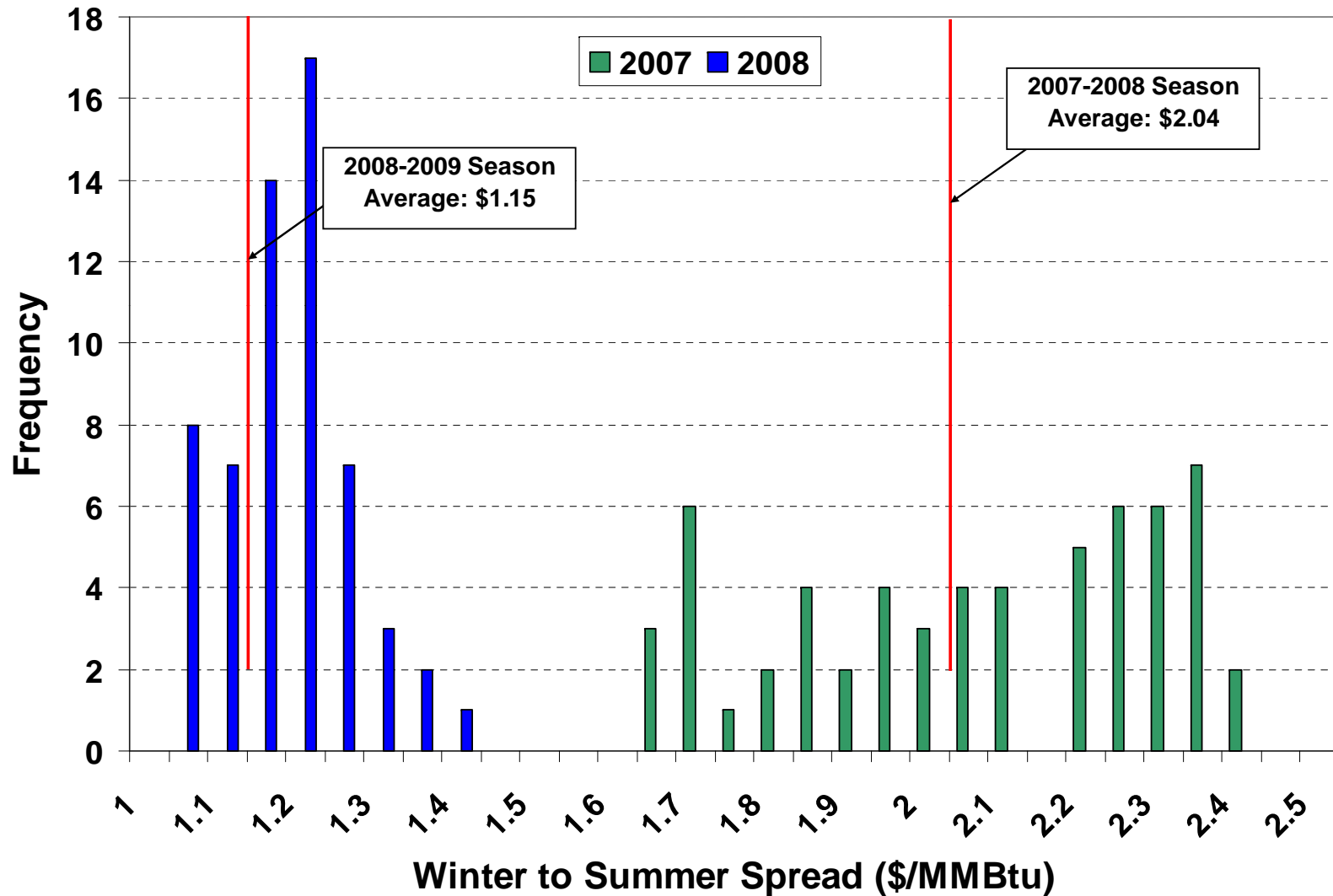
## Underground Storage Capacity Development Surging



\* 2008 includes active fields only.

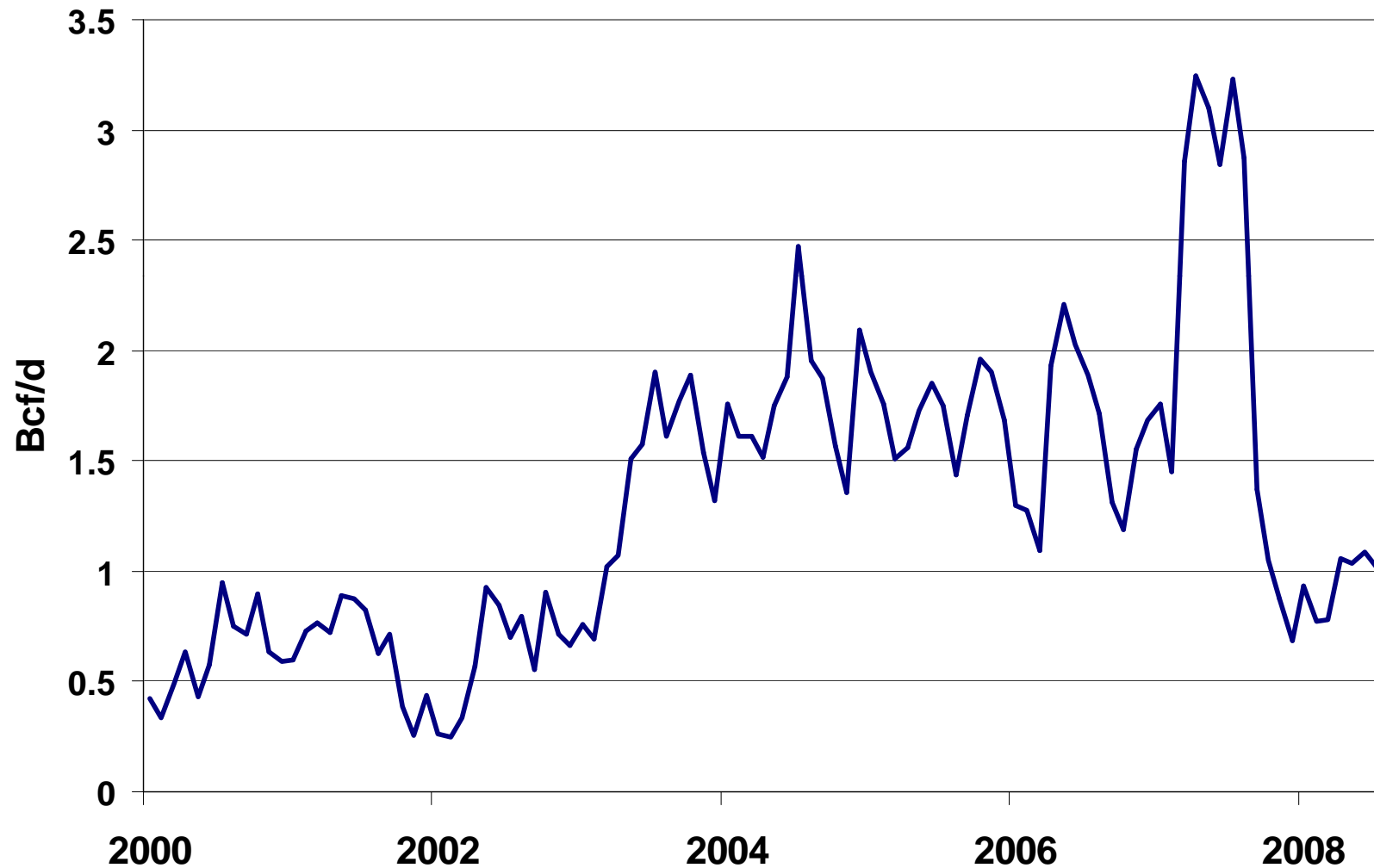
Source: Energy Velocity

# NYMEX Henry Hub Seasonal Spreads



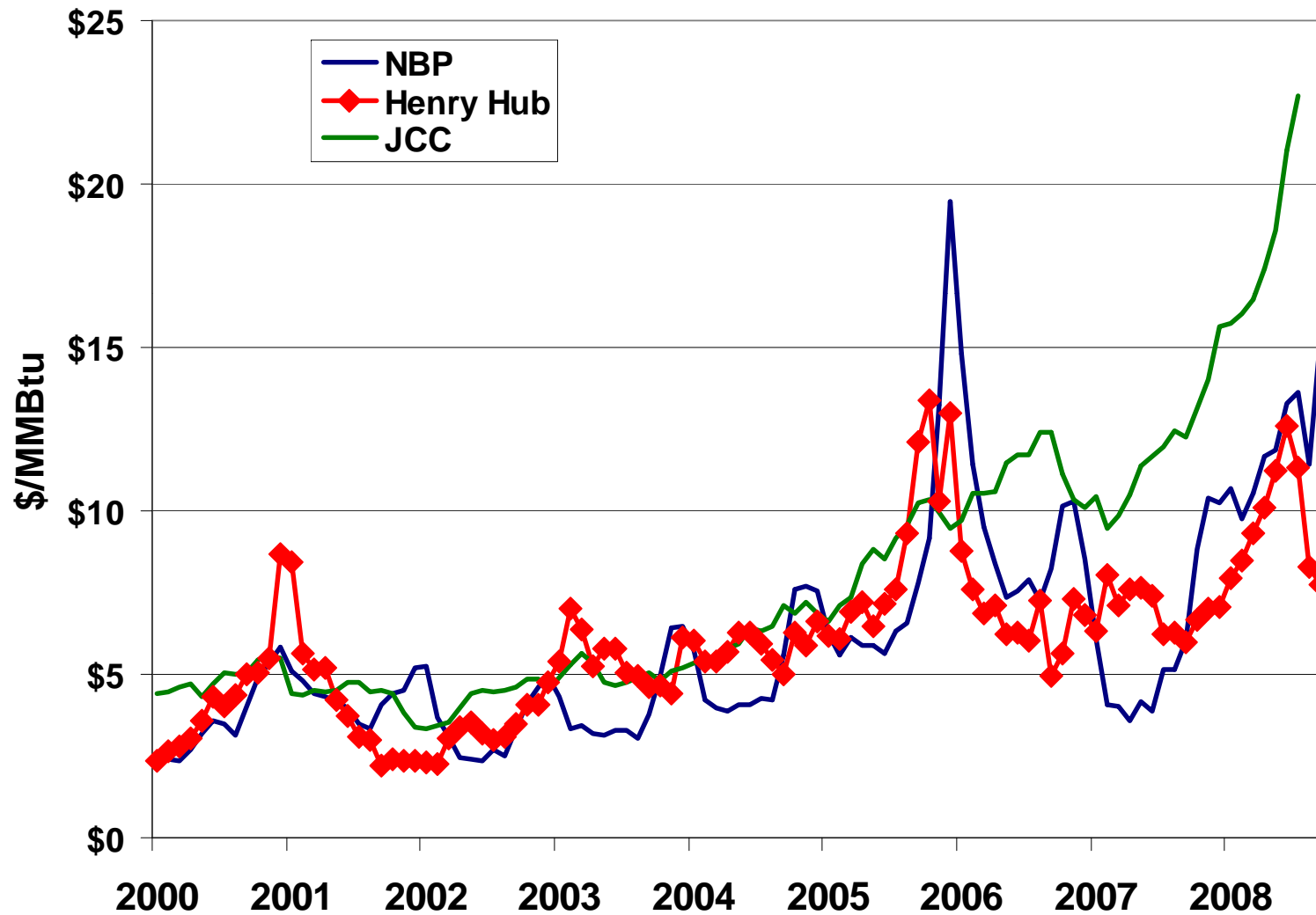
Source: Energy Velocity, NYMEX

## LNG imports have yet to arrive consistently



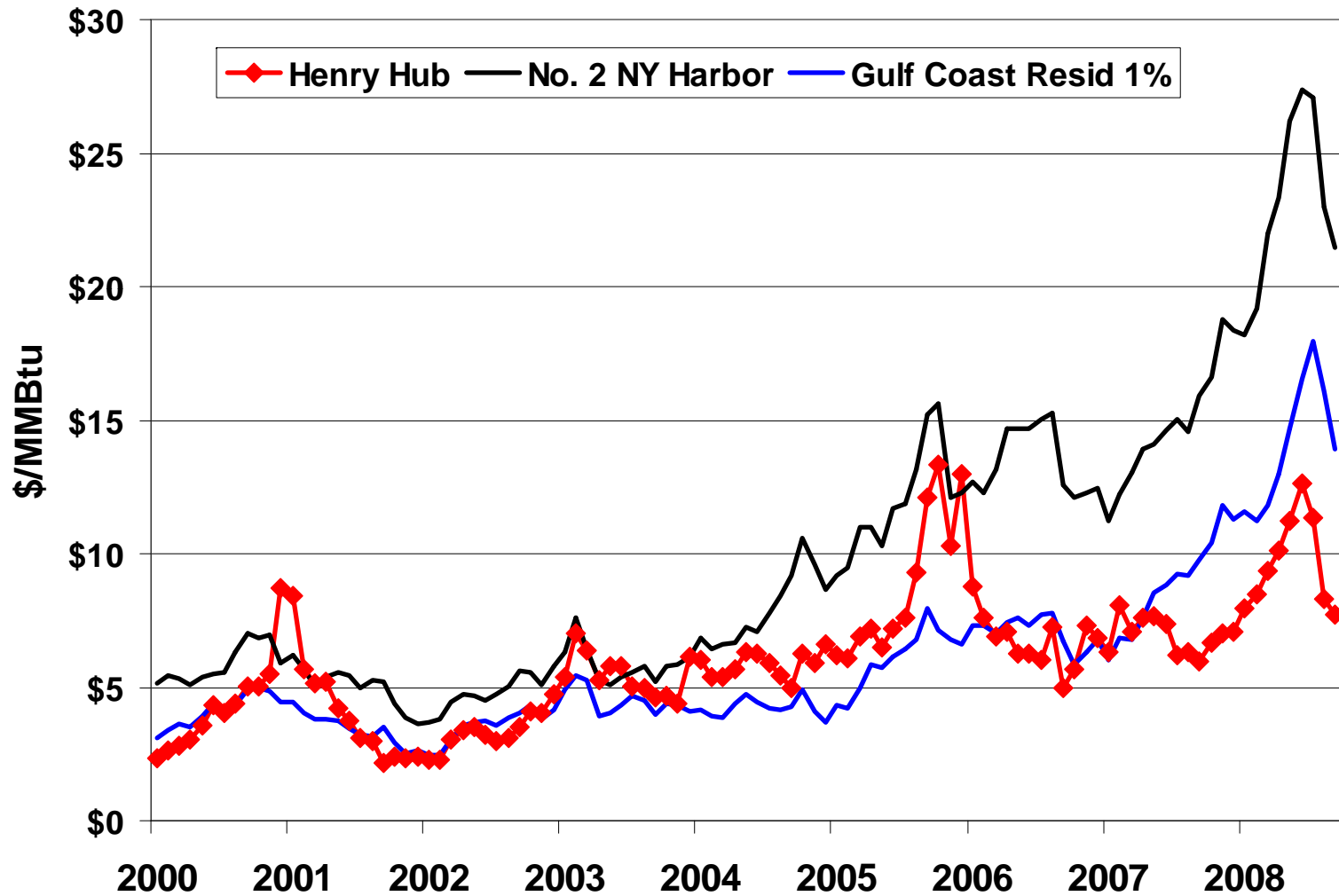
Source: EIA

## Oil linked European and Asian markets at premium to U.S.



Source: ICE, NYMEX, PAJ

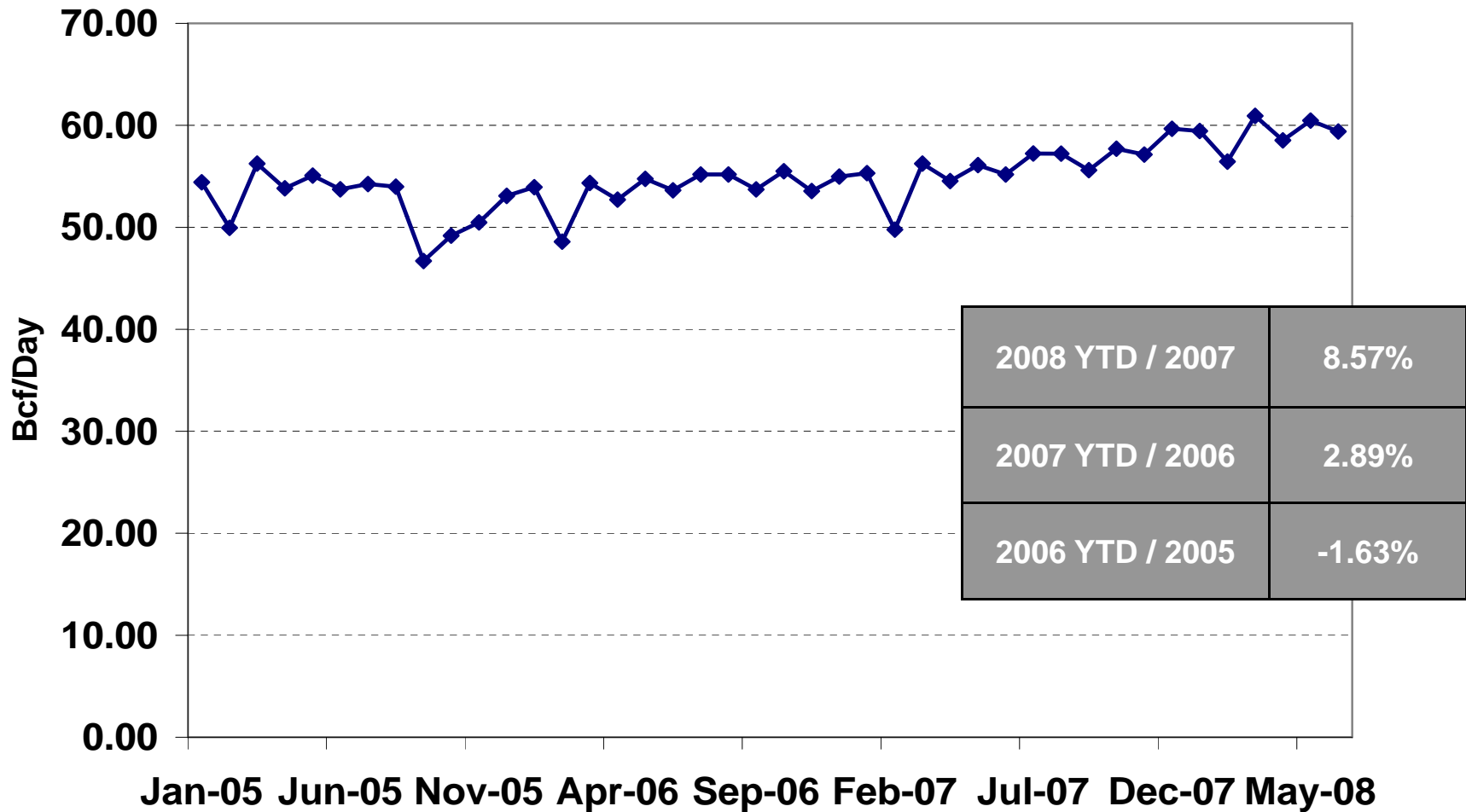
## Henry Hub prices have fallen below the oil price “floor”



Source: Platts GASdat, EIA

# U.S. Gas Production Trending Up

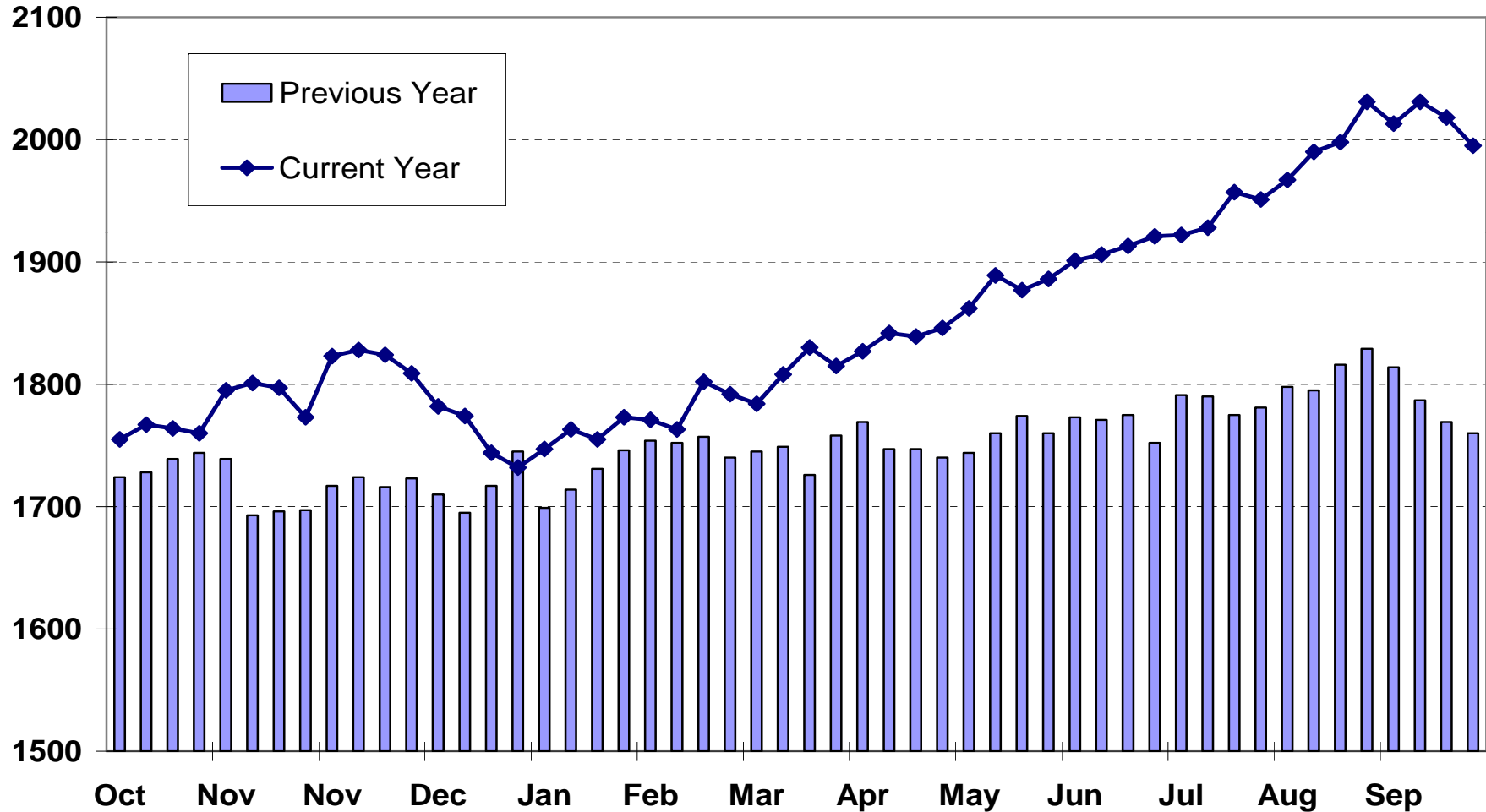
**US Natural Gas Marketed Production 2005-2008**



Source: EIA

# US rig count stalled after long climb

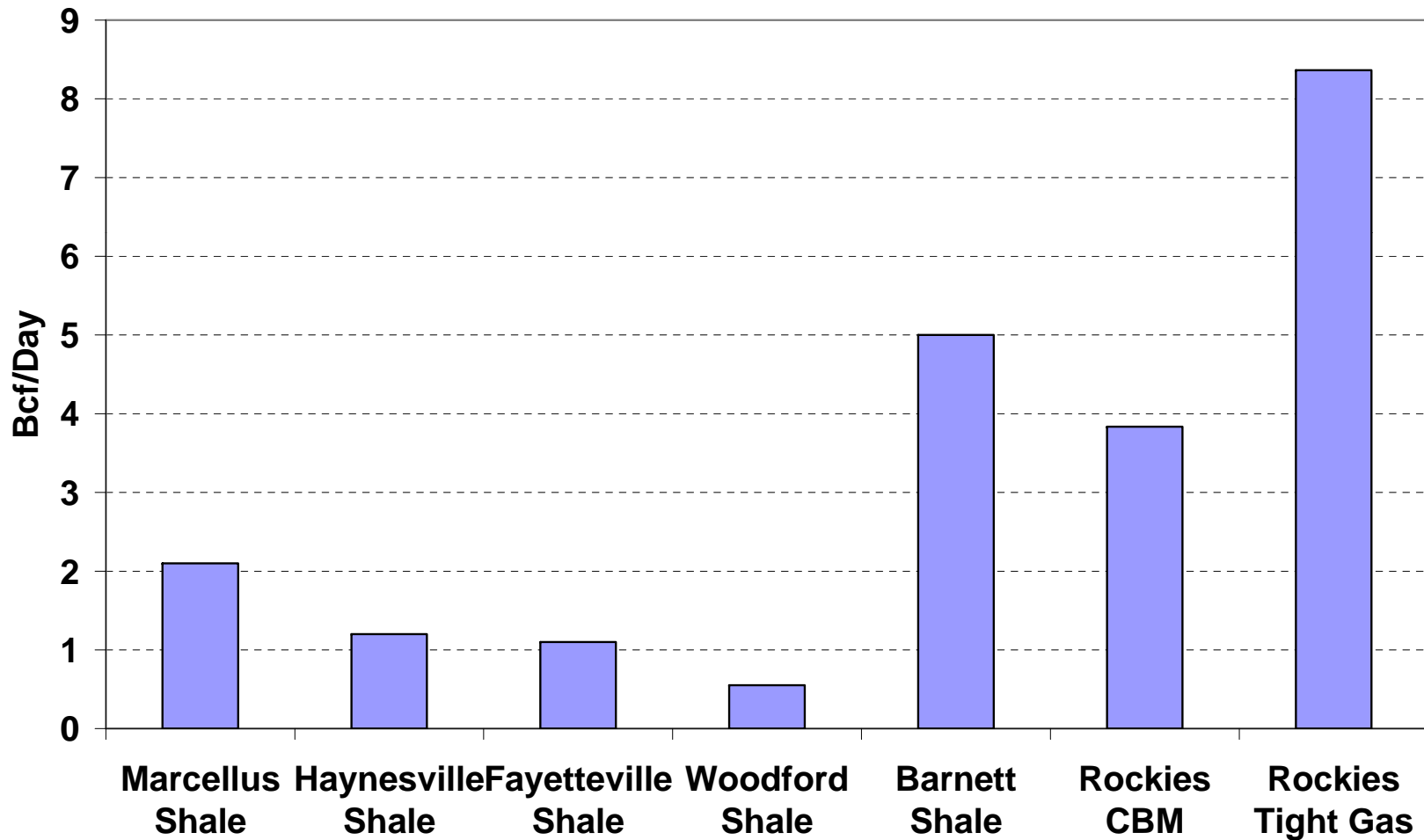
US Rig Count



Source: Baker Hughes

# Spotlight on the “Hot Plays”: Shale and CBM

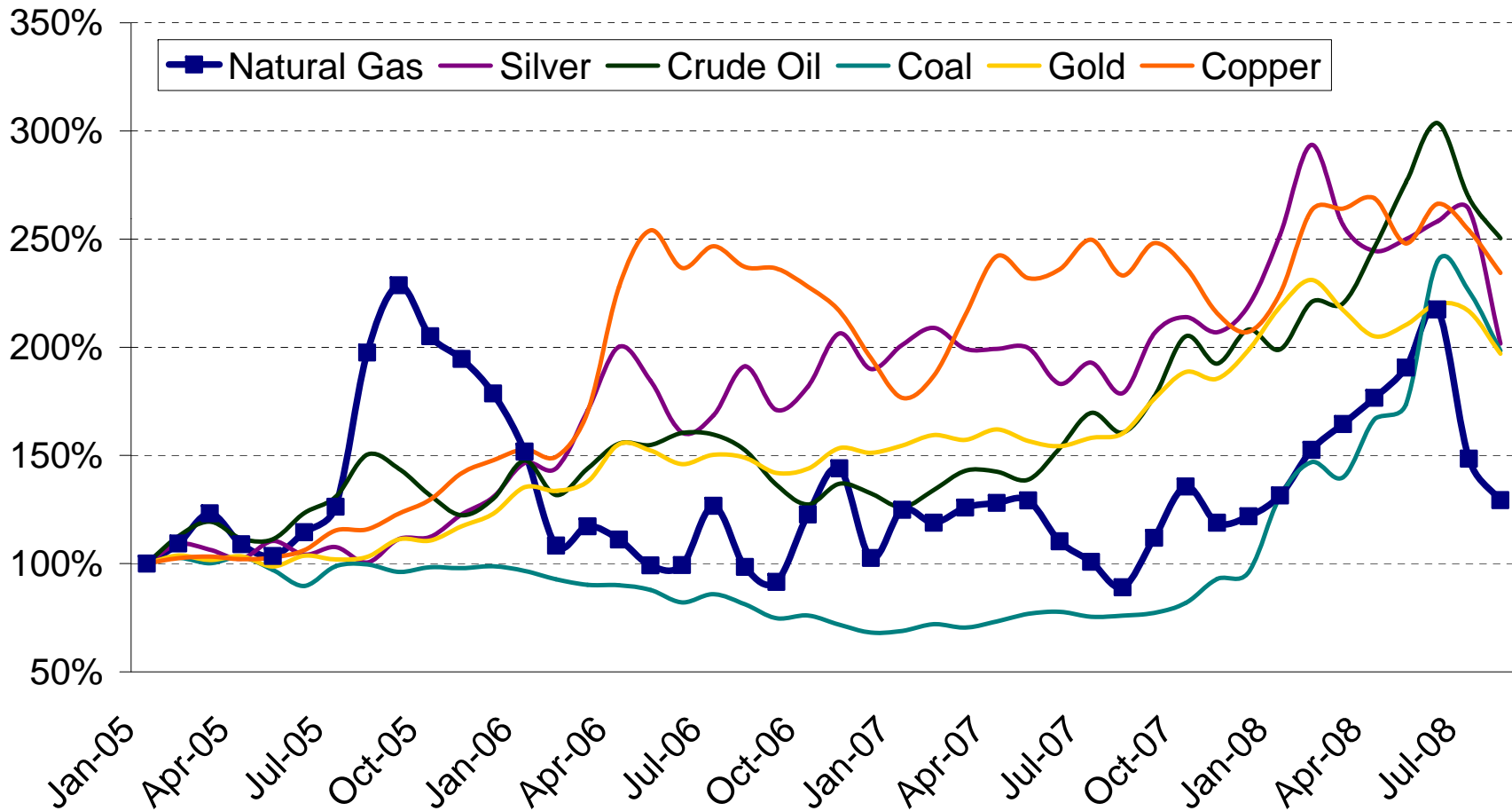
## Projected Peak Production for Unconventional Gas



Source: B&V Analysis

# Impact of commodity bubble on natural gas...

## Commodity Price Index 2005-2008



Source: NGS&A and CBOT

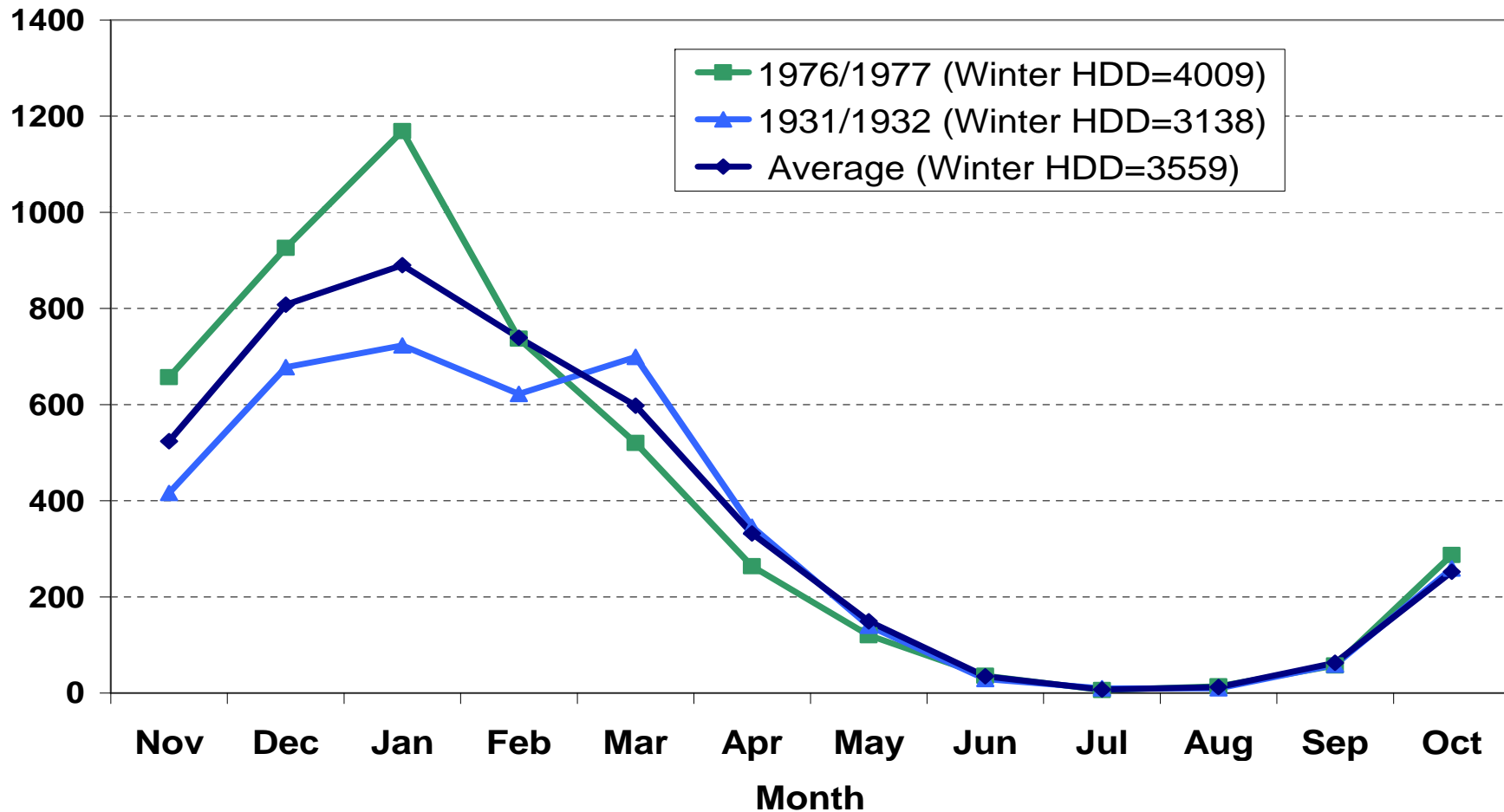
## Winter Outlook: Short Term Supply Outlook

- The U.S. natural gas market has been characterized as tight since 2002
- Non-conventional production surge driving growing fear of a supply glut
- Lack of LNG imports and hurricane shut-ins kept prices high through summer
- Producers appear to be bracing for lower price environment

Source: B&V Analysis

# Winter Outlook: Short Term Demand Outlook

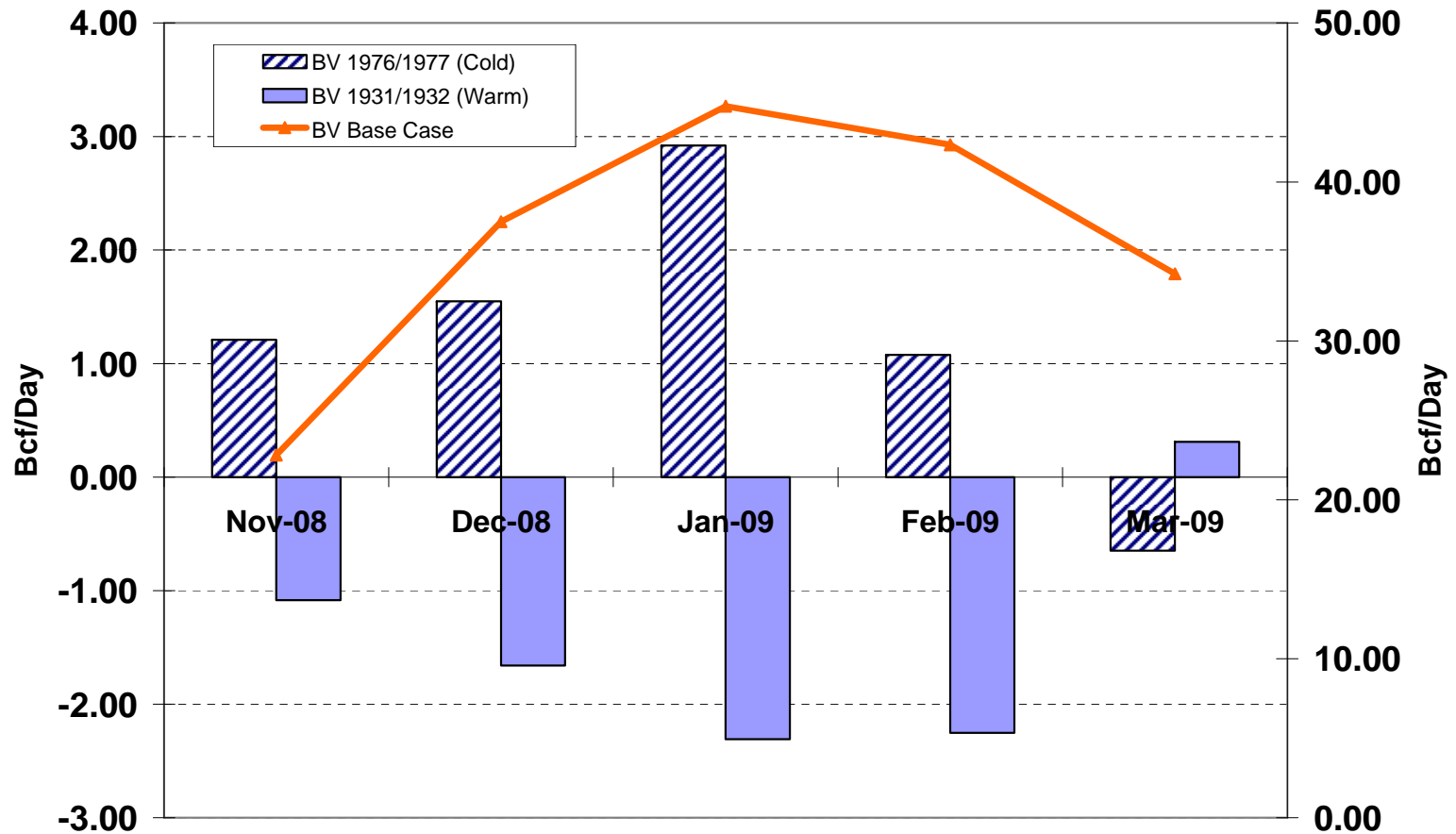
## Historical HDD



Source: B&V Analysis

# Winter Outlook: Short Term Demand Outlook

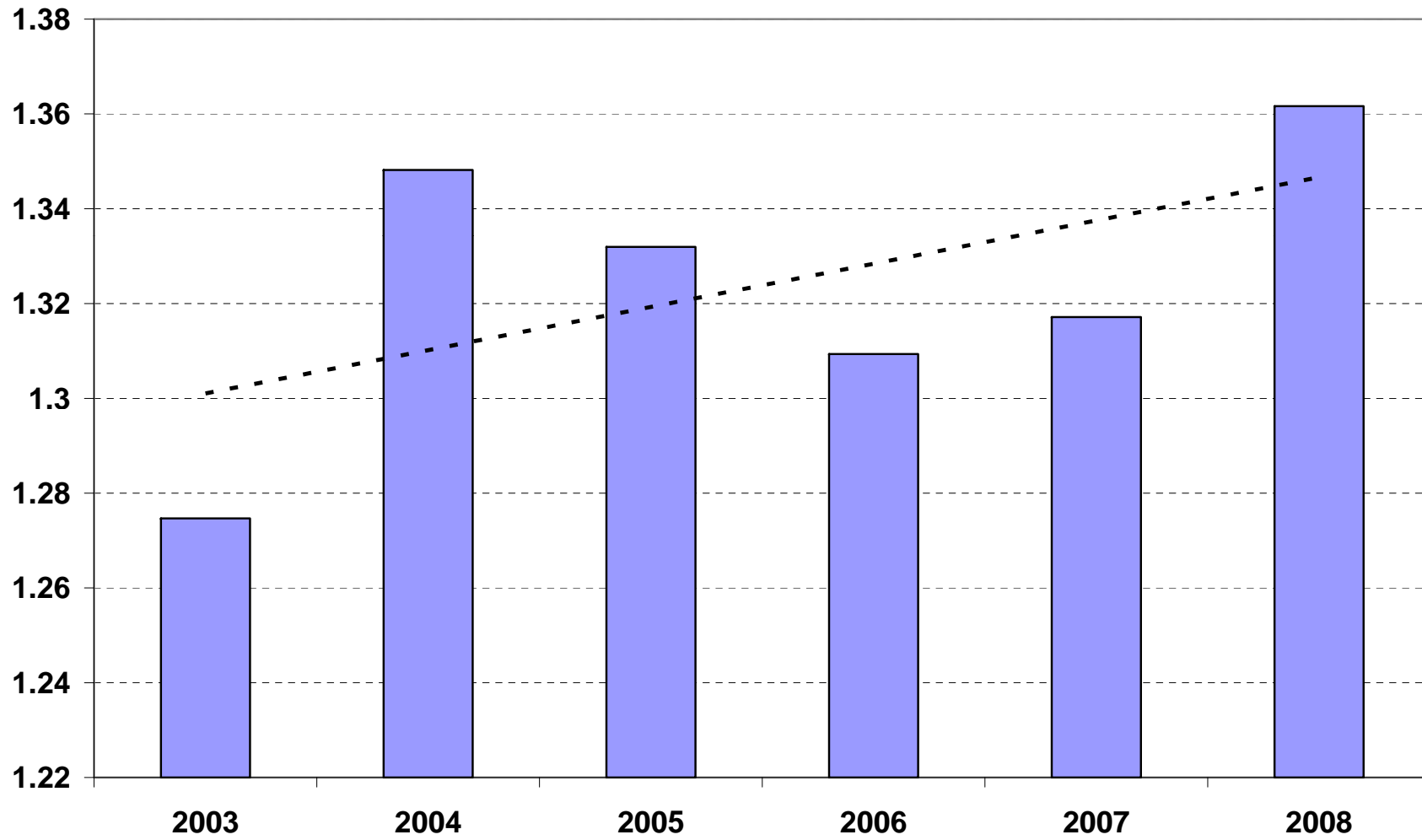
US Natural Gas Core Consumption Forecast 11/2008-03/2009



Source: B&V Analysis

# Winter Outlook: Short Term Demand Outlook

## California Natural Gas Daily Peak/Average Ratio



Source: B&V Analysis; Energy Velocity

## Conclusions

- The U.S. natural gas market is well prepared for typical winter season demand
- U.S. gas producers have shown they can bring new supplies to market at higher price levels
- Significantly colder than normal winter would stress storage
- Meeting peak day requirements and managing price volatility are ongoing challenges for gas utilities