

May 4, 2009

# Natural Gas Trends

## Highlights

### NEW USES FOR FRAC MAPPING TOOLS

**Microseismic mapping and tiltmeter mapping.** In 2007, Houston-based Pinnacle Technologies, Inc. ([www.pinntech.com](http://www.pinntech.com)) made headlines in a joint venture with the U.S. Department of Energy's Office of Fossil Energy by combining two cutting edge hydraulic fracturing (fracing) technologies, including microseismic mapping and tilt mapping, to locate and extract natural gas from tight sands, shale formations and coal seams. The hybrid version of these two technologies eliminated steps, cut costs, and increased opportunities for gas recovery by combining tiltmeter observation and microseismic fracture mapping with geophone sensors in one array in one well, rather than in multiple wells and arrays.

Today, these technologies can be used to modify the fracture treatments to prevent out of zone growth of the fracture into areas where fracturing is not planned.

**Protecting water resources.** Lately, legislators and regulators across the U.S. have deliberated over the potential for water resources to be harmed by chemicals in frac fluids. According to Kevin Fisher, President of Pinnacle, microseismic mapping and tilt mapping technologies can be used to verify containment in real-time. In other words, discrete fracmapping and hybrid fracmapping technologies can be used to verify that hydraulic fracturing is safely contained to areas away from water resources.

**Sewage Containment Pilot Project.** In a joint project involving Pinnacle, Hyperion, and the U.S. Environmental Protection Agency, the City of Los Angeles will dry and pump some of its sewage in hydraulic fracturing operations as a disposal solution. The slurry will be injected into depleted reservoirs where it will be contained. Pinnacle is using its monitoring technologies to verify that the waste is contained at its intended destination.

Pinnacle, which is owned by Halliburton, maps thousands of fracs per year.

Sources: Kevin Fisher, President, Pinnacle Technologies, Inc. and [www.fossil.energy.gov](http://www.fossil.energy.gov)

## Data

- June Natural Gas Futures Contract (May 1), NYMEX at Henry Hub closed at \$3.546
- June Light, Sweet Crude Oil Futures Contract (May 1), NYMEX at Cushing closed at \$53.20 per Bbl. or approximately \$8.47 per MMBtu

### Heating Degree Days

From 4/26/09 thru 5/2/09, Texas and the U.S. experienced cooler than normal weather. For the heating season (7/1/08 to present), cumulative heating degree days were 12% below normal for Texas and 1% below normal for the U.S.

Source: [www.cpc.ncep.noaa.gov](http://www.cpc.ncep.noaa.gov)

#### Heating Degree Days (HDD) *Week ending 5/2/09*

City or Region	Week Total HDD	Week HDD +/- from Normal *	Year-to-date Total HDD	YTD, % +/- from Normal *
Amarillo	47	2	3609	- 15 %
Austin	0	-3	1560	- 5 %
DFW	0	-7	1863	- 21 %
El Paso	0	-11	1977	- 22 %
Houston	0	-7	1158	- 24 %
San Antonio	0	-4	1064	- 32 %
Texas**	1	-6	1742	- 12 %
U.S.**	40	-18	4317	- 1 %

\* A plus (+) value is cooler than normal; a minus (-) value is warmer than normal. NOAA uses 65° Fahrenheit as the 'normal' basis from which HDDs are calculated.  
 \*\* State and U.S. degree-days are population-weighted by NOAA.

### U.S. Working Gas in Storage at 1,823 Bcf

For the week ending 4/24, U.S. working gas in storage increased from 1,741 to 1,823 Bcf, as compared to 1,359 Bcf in storage a year ago and 1,488 Bcf for the 5-year average from 2004 to 2008. Working gas in storage in the producing region (which includes Texas) increased from 779 to 805 Bcf, as compared to 527 Bcf in storage a year ago and 577 Bcf for the 5-year average from 2004 to 2008.

Source: [www.eia.doe.gov](http://www.eia.doe.gov)

#### U. S. Working Gas in Storage (Bcf) *Week ending 4/24/09*

Region	This Week	Last Week	Change	Current Δ from 5-Year Average (%)
East	710	668	+ 42	+ 2.6 %
West	308	294	+ 14	+ 40.6 %
Producing	805	779	+ 26	+ 39.5 %
Lower 48 Total	1823	1741	+ 82	+ 22.5 %

**U.S. Gas Rig Count Drops to 741**

The U.S. gas rig count was down 1 for the week and down 732 when compared to 12 months ago. The U.S. total rig count was down 10 for the week and down 894 when compared to 12 months ago. Source: Baker Hughes, Inc.

*Baker Hughes Rotary Rig Count (5/1/09)*

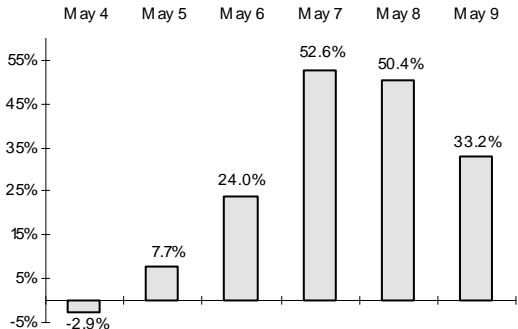
	This Week	+/- Last Week	Year Ago	+/- Year Ago
U.S.	945	-10	1839	-894
Gas	741	-1	1473	-732
Oil	196	-6	357	-161
Texas	375	-3	882	-505
N. Amer.	1012	-8	1934	-922

**Above Normal Energy Use Expected This Week**

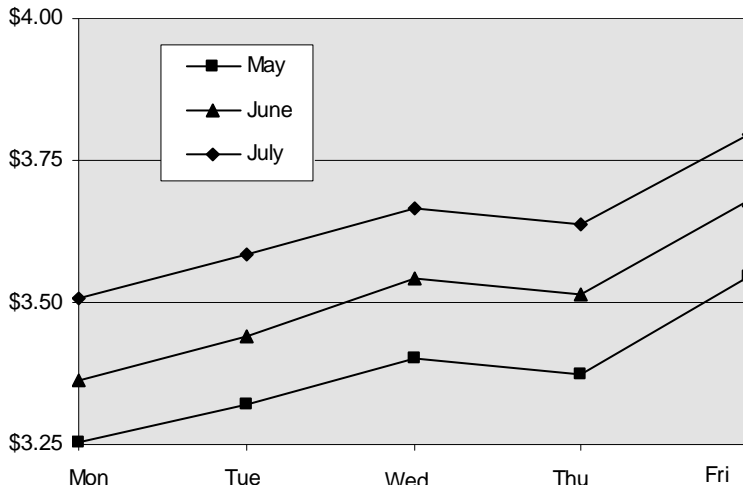
With the exception of 5/4/09, significantly higher than normal energy use is forecasted for the U.S. this week, according to the Dominion Energy Index, as shown below. The index forecasts total U.S. residential energy usage, a component of which is natural gas.

Source: Dominion Energy Index

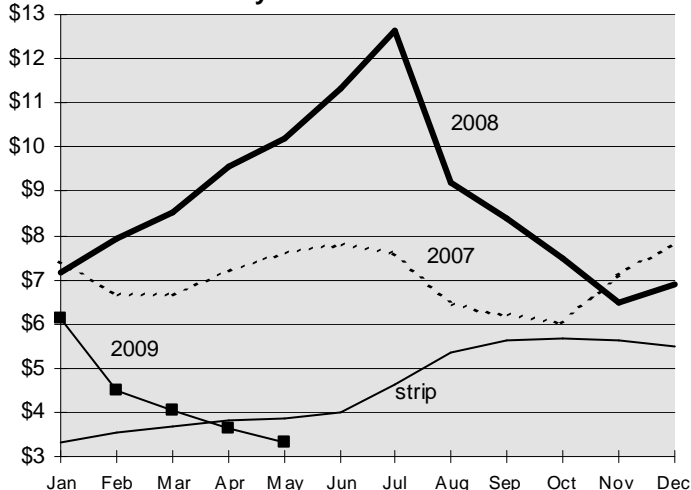
**U.S. Energy Use Forecast**



**NYMEX Natural Gas Price Movement 4/27/09 - 5/1/09**



**NYMEX Henry Hub Futures Contract Prices**



**Gas Price Summary 050109**

	This Week	+/- Last Week	+/- Last Year	12-Month Strip Avg.
U.S. (May Futures)				
NYMEX	\$3.297	\$0.000	-\$8.014	\$4.734