

September 13, 2013

Utica Shale: 57' of Point Pleasant Found at the JB Hayes Well in Athens County

Summary

We have been watching the Utica-Point Pleasant Play for two years now and a clear trend is emerging: the best wells are lining up like a string of pearls leading us to Washington County. We would buy Magnum Hunter (MHR-\$5.39, Buy) and PDC Energy (PDCE-\$58.42, Buy) ahead of their well results from this county. In our opinion, the Farley and Garvin wells will likely be good, as they are in the best part of the wet gas condensate belt. We have reasons to believe that a good portion of Washington County could be prospective as the Flat Rock Beardmore #1 well has encountered a liquid rich 96-foot interval within the Point Pleasant unit. We have been granted access to core data from the JB Hayes well in eastern Athens County with 57 feet of good looking Utica; this has positive implications for Southern Washington County.

Key Points

- **Big Utica wells lining up like a string of pearls:** Chesapeake Energy (CHK-\$26.92, Buy) announced test results in September of 2011; the best well, Buell #8 H in Harrison County, tested 3,010 boepd (47% NGL). Since then, the activities moved south with Gulfport Energy (GPOR-\$61.72, Buy) leading the pack, delivering record tests from Harrison, Belmont, and Guernsey Counties. On August 13 2013, Antero Resources (private producer) released Utica test results: the Yontz 1H well in northwestern Monroe County, delivered a 24-hr IP rate of 8,879 boepd (36% liquids). The Yontz 1H well is located about 10 miles southwest of and on trend with GPOR's best well, the Shugert 1-12H, which delivered a 24-hr IP of 7,482 boepd (44% liquids).
- **Buell, Wagner, Shugart and Yontz wells fall nicely on a northeast-southwest trend, leading to Washington County.** The string of gushers is parallel to the wet gas/dry gas demarcation line for the Utica trend. If we continue to move along the trend southwestward, we run directly into two wells in Washington County: Magnum Hunter's Farley 1305H, completing, test results expected in September; and PDC Energy's Garvin 1H well, also in northern Washington County, completed, resting, first production in early October. Flat Rock's Beardmore #1 location with a liquid rich 96-foot interval within the Point Pleasant unit is located at the very southwestern edge of this trend. All seven wells lined up.
- **Flat Rock Resources provided a key data point from its Beardmore #1 well in southern Washington County.** This March, we wrote about the core data from Flat Rock Resources (private producer). The company drilled and cored two wells in Washington County, Ohio. The second well, the Beardmore #1 in southwestern Washington County found 96 feet of liquids rich Point Pleasant. This data point is on trend within the oil and condensate-wet gas zone we mapped and confirmed for the first time, that central and southern Washington County in Ohio can be prospective for Point Pleasant. This data point is consistent with PDCE's Palmer well which was drilled as vertical and cored extensively.
- **JB Hayes 317V Well in Athens County encountered 57 feet of Point Pleasant.** We were granted access to data from two wells drilled in eastern Athens County, these wells are 12 miles southwest of the Beardmore well. Mr. James Brent Hayes of Ohio, drilled the JB Hayes 317V well, located in Rome Township, Athens County. Drilling began on July 9 2012; the well reached a total depth of 6,200 feet in the Trenton Lime Stone, drilling was completed on July 17 2012. The well is producing gas from shallower sections. The company did not test the Utica Point Pleasant interval, but did collect an extensive suite of logs and rotary sidewall cores at 8 intervals, one within the Utica and the rest within the Point Pleasant unit.
- **The Point Pleasant is high in carbonate, low in clay and has good permeability.** Core analysis shows that the Point Pleasant is very high in carbonate content, averaged 46% and can get as high as 70% near the bottom of the well. Clay content averaged 31% and can get to as low as 19%, also near the bottom of the well. Porosity averaged 3.8% with one sample as high as 8.3% near the top of the Utica unit. TOC ranges from 0.35% to 2.35%. On thermal maturity: the samples from the JB Hayes well generally fall within the oil window. This is consistent with our trend map and test results from Morgan, Noble and Monroe County. We actually adjusted our black oil line a little westward to reflect this data point.
- **Expecting catalyst wells between September and November from Washington County.** We would Buy PDCE and MHR today. PDCE also drilled the Neill 1 H well about 7 miles west of the Garvin well in the same county. This well will likely be on production in late October 2013. While we understand the reported 24-IP rates are not the most ideal for comparisons, as methodologies vary and these rates do not take into account the variable lateral lengths, no less, a clear pattern is emerging and we expect positive surprises from Washington County. The core data analysis from the JB Hayes 317V has positive implications for Washington County and give us a higher sense of comfort that PDCE and MHR have landed good acreage here.
- **How far south does the Utica – Point Pleasant Play go?** If the Point Pleasant Unit is present in Athens County, this bodes well for Washington County. We do not know where the play ends, but based on the Ohio Department of Natural Resources, Division of Geologic Survey, the Utica should be present in most of Athens County and terminate in Meigs County by truncation. But it is unclear to us how the Point Pleasant Unit thins to the south.

Utica- Point Pleasant Play in Ohio–Best wells are lining up

We have been writing about the Utica-Point Pleasant Play for two years now and a clear trend is emerging: the best wells are lining up like a string of pearls and connecting the dots would lead us to Washington County. Please see our August 19 piece titled: “Utica Shale: a String of Gushers leading to Washington County, Ohio”.

We are expecting catalytic tests from Washington County and would buy Magnum Hunter and PDC Energy ahead of the well results which are expected in October to November time frame.

1. MHR’s Farley 1305H, completing, test results expected in September.
2. PDCE’ Garvin 1H well, also in northern Washington County, completed, resting, first production in early October.
3. PDCE also drilled the Neill 1 H well about 7 miles west in the same County. This well will likely be on production in late October 2013.

We believe that there is still some skepticism on whether Northern Washington County would be productive within the Utica-Point Pleasant Interval. Seeing strong well results this fall would do much to dispel this concern.

In our opinion, the likelihood that the Farley and Garvin wells will deliver good tests is high, as they are both located in the best part of the wet gas condensate belt. We have reasons to believe that a good portion of Washington County could be prospective for the Utica-Point Pleasant Play as the Flat Rock Beardmore #1 well has encountered a liquid rich 96’ interval within the Point Pleasant unit in the middle of the County. The Beardmore #1 well is located less than 10 miles south west of MHR’s Farley well and PDCE’s Neill Well, in the middle portion of Washington County.

JB Hayes 317V Well in Athens County encountered 57 feet of Point Pleasant

We were granted access to data from two wells drilled in eastern Athens County, which is adjacent to Southern Washington County in Ohio and just across the river from Wood County in West Virginia. These wells are 12 miles south west of the Beardmore well, and show that far south as Athens County, while thinner, good quality Point Pleasant can still be found.

Mr. James Brent Hayes of Ohio, along with partner R. Wolfe Oil and Gas LLC drilled the JB Hayes 317V well, located in Rome Township, Athens County (figure 1). Drilling began on July 9 2012; the well reached a total depth of 6,200 feet in the Trenton Lime Stone. Drilling was completed on July 17, 2012 and the well was logged down to 6,102 feet. The well is producing gas from shallower sections. The company did not test the Utica Point Pleasant interval, but did extensive suite of logs and collect rotary sidewall cores at 8 intervals, one within the Utica and 7 in the Point Pleasant unit.

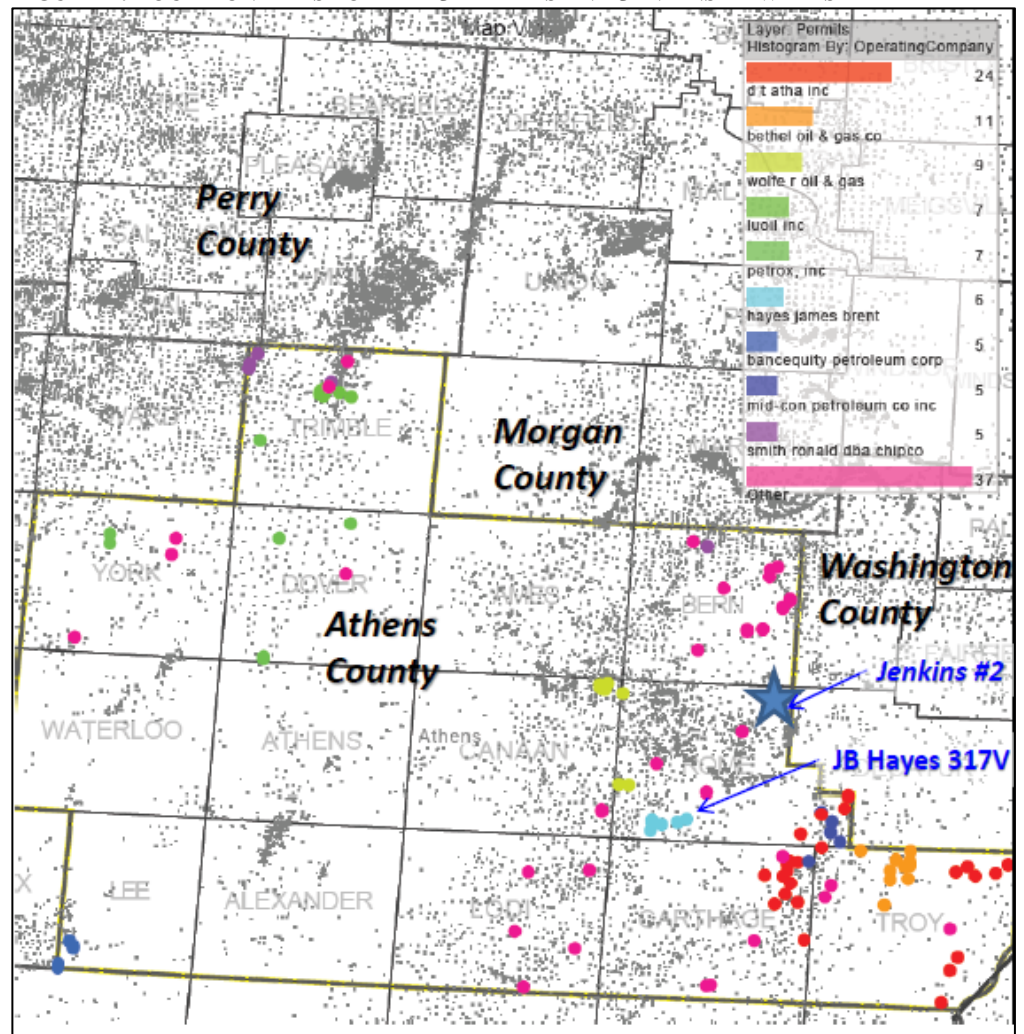
From the core data, the following attributes were extracted:

- Dry helium porosity (% of bulk volume)
- TOC, Maturation
- Mineral contents (% clay, carbonates and others).

The core information was integrated with well log data by NuTech using the NuLook advanced petro-physical evaluation. The company also incorporated another nearby well, the Jenkins #2 well into the NuTech evaluation (Figure 1).

The Jenkins #2 spudded on January 15, 1986 and was completed on January 22. The well reach total depth of 7,524 feet and logged to 7,436 feet, a total of 69 feet of Point Pleasant unit was identified. It is classified as a gas producer from the Ohio Shale.

FIGURE 1: LOCATION MAPS FOR THE JB HAYES AND JENKINS #2 WELLS



Source: DrillingInfo, annotated by Wunderlich Securities

Point Pleasant: High in carbonated, low in clay and has good permeability

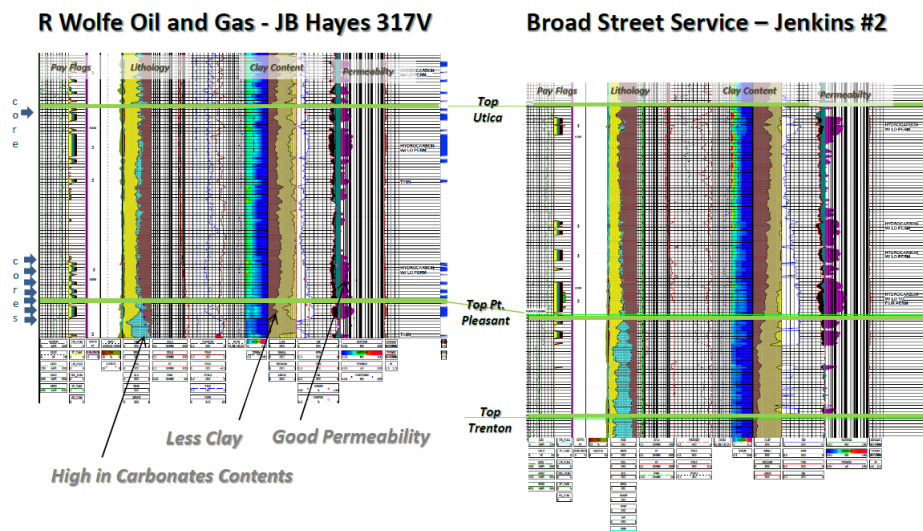
We were given access to the Nutech analysis by Mr. James Brent Hayes and the Point Pleasant unit looks remarkably similar to other wells up north. The JB Hayes well drilled through the Utica and landed on the top of the Trenton at total depth. However, there was not sufficient room near the bottom hole and only the top of the Point Pleasant Unit was logged. Therefore the nearby Jenkins well is useful in showing us what we missed at the JB Haynes well.

- At the JB Hayes well, 144 feet of Utica and 57 feet of Point Pleasant were encountered.
- At the Jenkins #2 well, 137 feet of Utica and 69 feet of Point Pleasant were found.

The company collected 8 side wall cores at the JB Hayes well; one is at ~5,889' near the top of the Utica interval. The rest of the 7 cores were collected between 5,990' to 6,030', within the lower portion of the Utica and the top portion of the Point Pleasant unit. The analysis shows the following.

- Section is very high in carbonate content, averaged 46% and can get as high as 70% near the bottom of the way. Clay content averaged 31% and gets to as low as 19%, also near the bottom of the well.
- Porosity range averaged 3.8% with one sample as high as 8.3% near the top of the Utica unit.
- TOC ranges from 0.35% to 2.35%.
- As received, % PV saturation averaged 52.9% for water, 12.6% for oil and 34.5% for gas.

FIGURE 2: LOCATION MAPS FOR THE JB HAYES AND JENKINS #2 WELLS

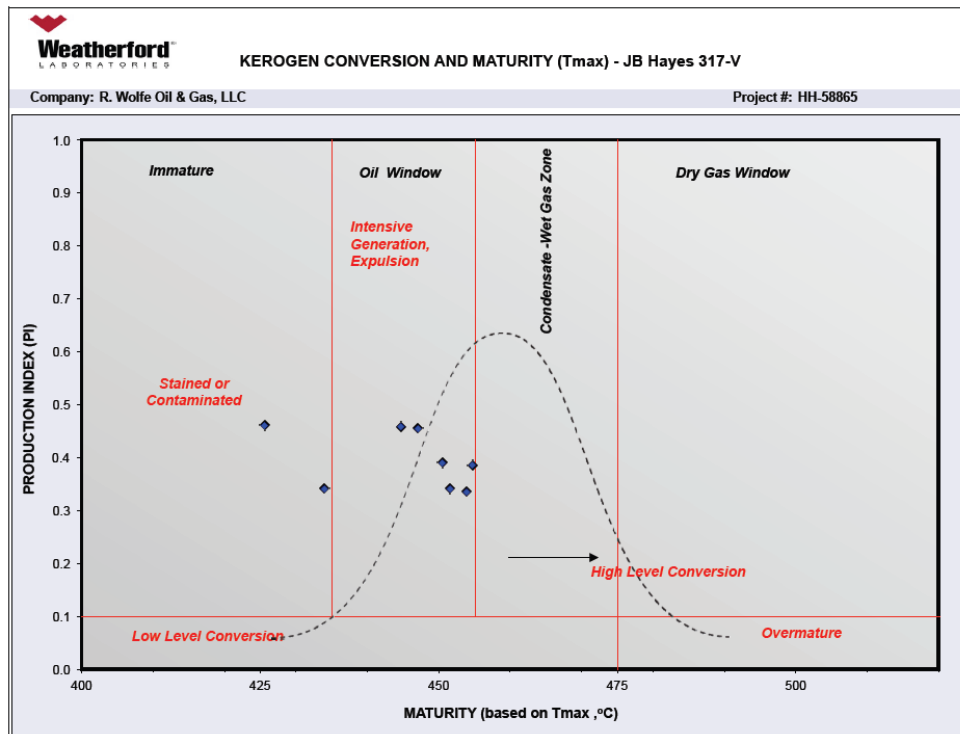


Source: Data and well logs reprinted with permission from Mr. James Brent Hayes, annotations by Wunderlich

JB Hayes Well likely in the Oil Window

Figure 3 is a chart showing kerogen and conversion maturity. The samples from the JB Hayes well generally fall within the oil window.

FIGURE 3: MATURATION ANALYSIS



Source: Weatherford Labs, Golden Colorado, chart reprinted with permission from Mr. James Brent Hayes.

This is consistent with our trend map and test results from Morgan, Noble and Monroe County. We actually adjusted our black oil line a little westward to reflect this data point (Figure 4).

Data points support what we hear about the Point Pleasant Unit in the South

According to the Ohio Department of Natural Resources, Division of Geological Survey, the Point Pleasant has the right thickness, fracability and source rock richness to make Ohio the center of this play (Wickstrom, et al, 2012). The study showed the Barth #3 well in Coshocton County with average TOC of 2.78%, and can get as high as 4.85%--same high carbonate contents we see in the Athens County wells.

According to MHR, the Point Pleasant is a series of very thin, high-permeability carbonate stringer encased in organic rich rocks, with the stringer as conduits for flow. This, combined with over-pressured shale, explains the very high flow rates. MHR also tabulated some of the Utica attributes, which is consistent with what we are seeing from the wells in Athens County: clay content of 10 to 20%, TOC of 2% to 4%, permeability of less than 0.1 milli-darcy.

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Who's who in the Southern Part of the Ohio Utica (Point Pleasant) play

The playing field in the Utica-Point Pleasant Play has changed dramatically again. When the first wells came out, they were concentrated in Carroll County and dominated by CHK. But as producers continue to drill and delineate, the better wells are emerging from Belmont, Monroe, and Guernsey County, dominated by Gulfport Energy. The next hot spot will be Washington County with test results expected between September and November.

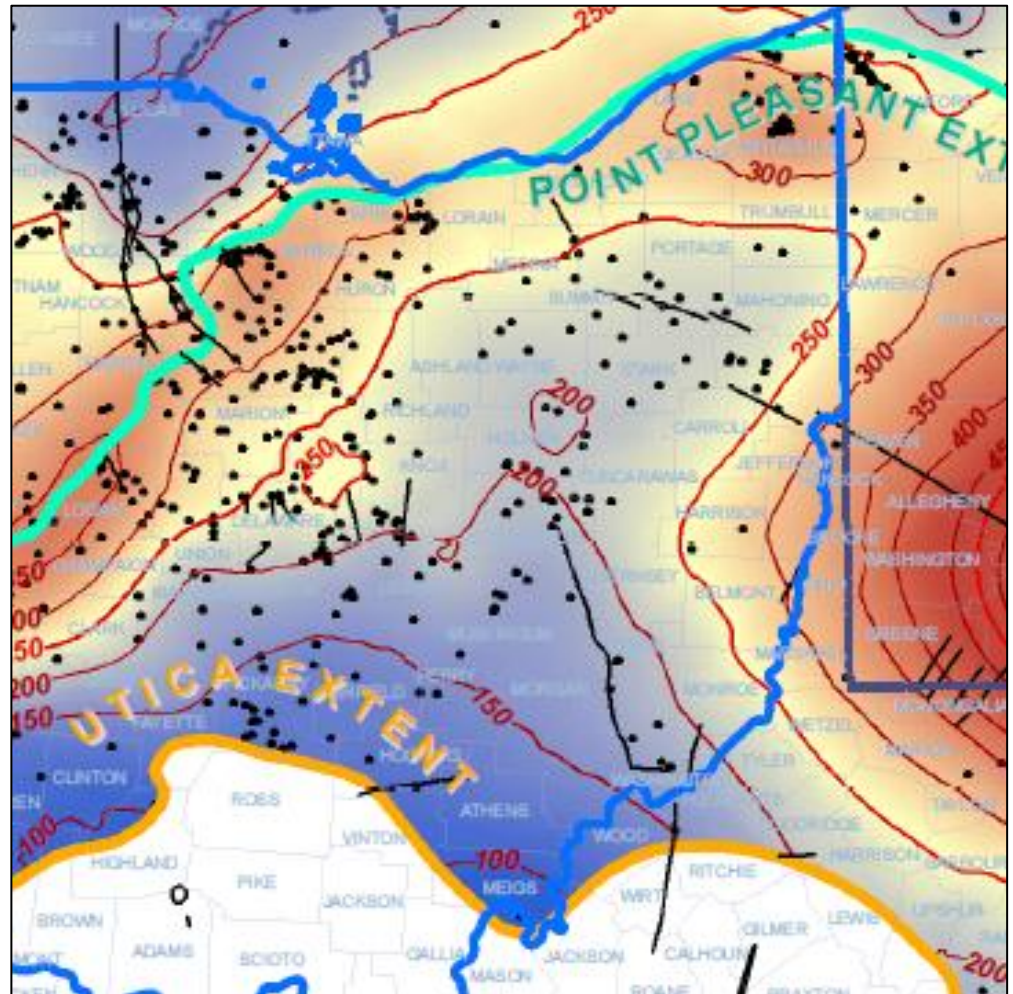
This is the list of public companies permitting for Utica in Southern Ohio:

- Anadarko Petroleum (APC-NR)
- CONSOL Energy (CNX-NR)
- EV Energy Partners (EVEP-NR)
- Hess Corporation (HES-NR)
- Magnum Hunter Resources
- PDC Energy

How far south does the Utica – Point Pleasant Play go?

If the Point Pleasant Unit is present in Athens County, this bodes well for Washington County. We do not know where the play ends, but based on the Ohio Department of Natural Resources, Division of Geologic Survey (Figure 5), the Utica should be present in most of Athens County and terminates in Meigs County by truncation. But it is unclear to us how the Point Pleasant Unit thins to the south.

FIGURE 5: THE EXTENT OF UTICA AND POINT PLEASANT UNITS



Source: Source: Ohio Department of Natural Resource, Division of Geologic Survey: A portion of the "Interval thickness map of Utica-4-06-2011".

Appendix: Theme pieces written on the Utica-Point Pleasant Play in Ohio

1. 2011, September 8: Understanding the Utica Shale in Ohio.
2. 2011, September 28: Test Data Put Utica Shale in the Same League as the Eagle Ford Shale
3. 2012, March 8: Utica Shale in Ohio – More than 45 Horizontal Wells Drilled.
4. 2012, April 25: Utica Point Pleasant Play – Ohio Geologic Survey Mapping the Core Area
5. 2012, May 29: Utica Shale in Ohio – Looking for More Test Results in August
6. 2012, August 10: Utica Shale in Ohio – A Better Picture of the Oil, NGL and Gas Windows.
7. 2013, March 5: Next Hot Spot for the Utica-Point Pleasant Play: Washington County Ohio
8. 2013, May 17: Ohio Data Isn't a Utica Tell-All but Does Show Who and Where is Best So Far
9. 2013: July 2: About to Know a lot More About the Southern Utica-Point Pleasant Play in Ohio
10. 2013: August 19: Utica Shale: a String of Gushers leading to Washington County, Ohio
11. 2013: September 13: Utica Shale: 57' of Point Pleasant at the JB Hayes well, Athens County, Ohio

Companies Mentioned							
Ticker	Rating	Price	Price Target	Ticker	Rating	Price	Price Target
CHK	BUY	26.92	30.00	GPOR	BUY	61.72	75.00
MHR	BUY	5.39	8.00	PDCE	BUY	58.42	70.00

Disclosures:

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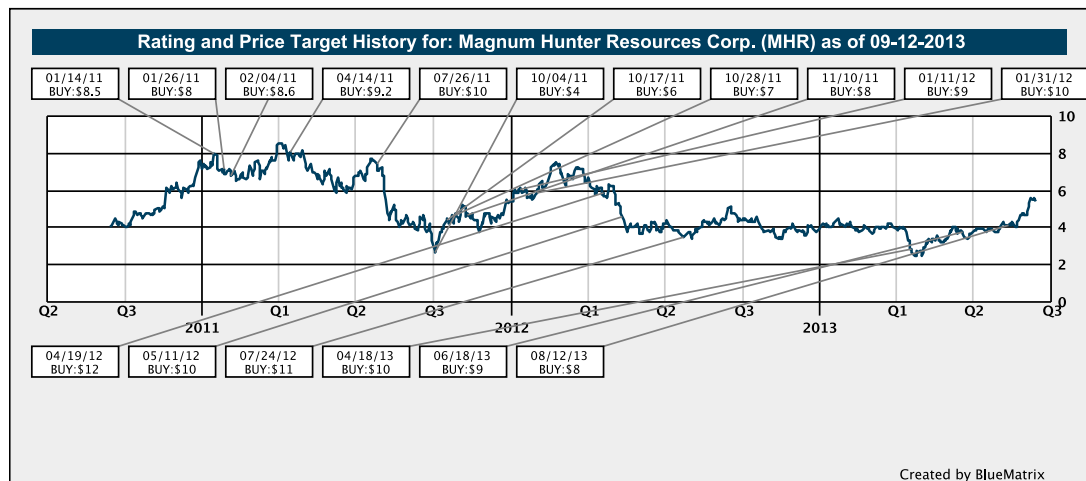
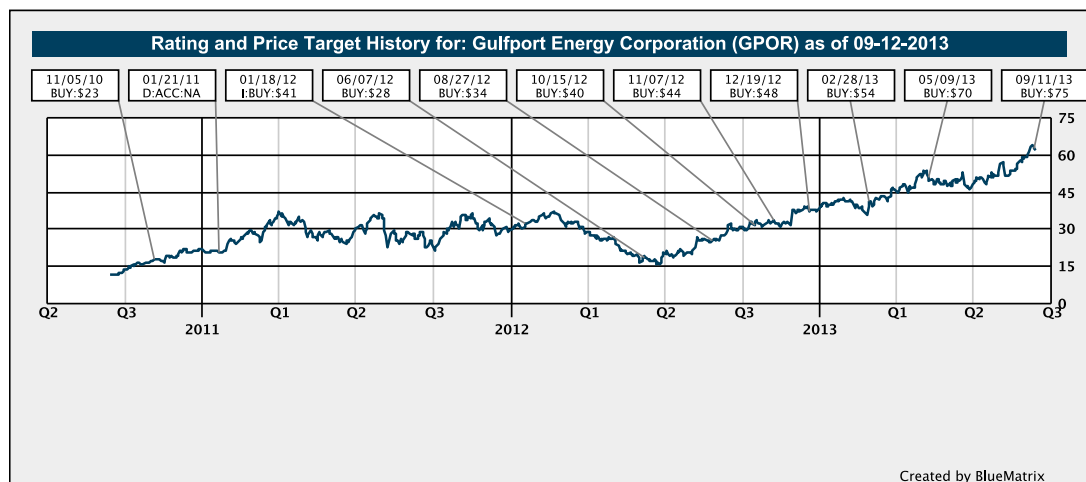
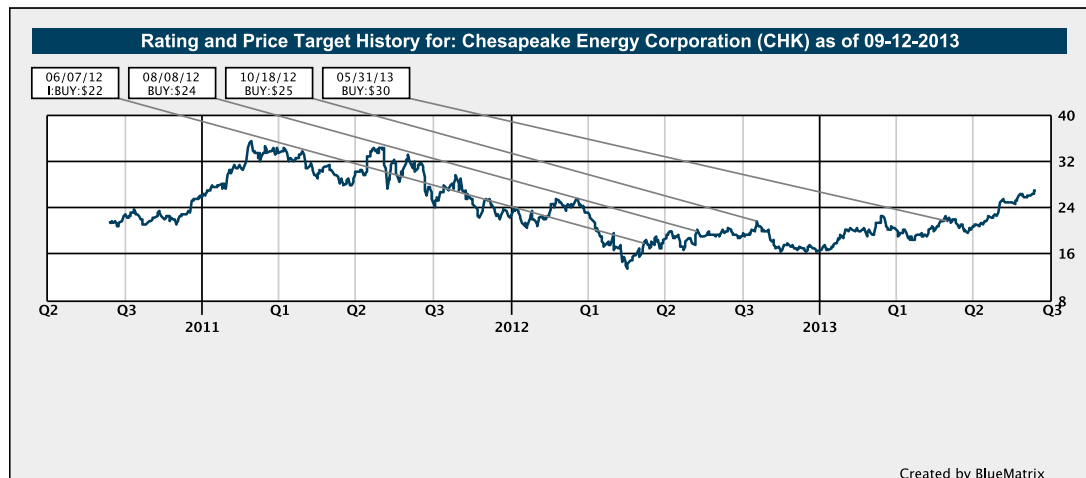
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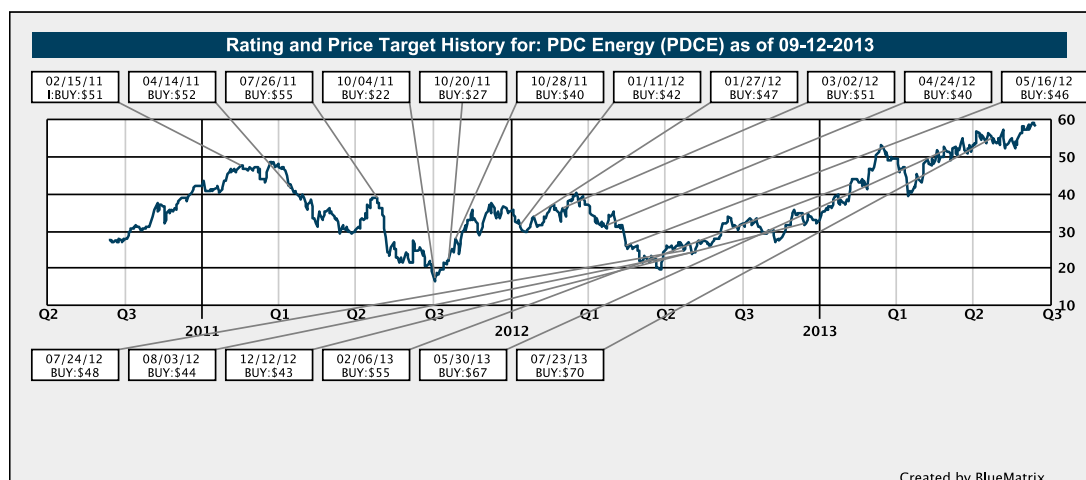
Buy – a security which at the time the rating is instituted or reiterated indicates an expectation of a total return of greater than 20% over the next 12-18 months.

Hold - a security which at the time the rating is instituted or reiterated indicates an expectation of a total return of plus or minus 5% over the next 12-18 months.

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