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# TOP NEWS

## Companies Need To Begin Preparing For Dodd-Frank

While primarily directed at Wall Street and mortgage lending reform, the Dodd-Frank Act is likely to have a significant impact on the oil and gas industries due to the legislation's initiatives to empower the U.S. Commodity Futures Trading Commission (CFTC).

Specifically, the act is designed to give the CFTC oversight of hedging to curb speculation designed to manipulate oil, gas and liquids prices. This action will require the commission to design a system from the ground up to monitor these markets. Such a system will require producers and traders to overhaul their own reporting and monitoring systems because of the sheer complexity involved.

"The whole industry is affected by Dodd-Frank," Bob Reilley, vice president, regulatory affairs, Shell Energy North America LP, said while speaking on a panel to discuss Dodd-Frank at last week's Deloitte Energy Conference in Washington.

"The CFTC is trying to provide position oversight reports on every swap," Paul Campbell, energy transacting and risk management services leader at Deloitte & Touche LLP, added.

Opponents of swaps contend that these transactions are complicated, but one of the biggest obstacles that the CFTC and the market must overcome is the sheer complexity of the law. Indeed, market participants are struggling how to best identify themselves in the language of Dodd-Frank.

*(continued on page 4)*

# NGL PRICES & FRAC SPREAD

## Crude Prices, Economic Malaise Push NGL Prices Down

Natural gas liquids (NGL) prices continued to drop this week as they followed the same path as crude oil due to uncertainties in the global economy. While Conway prices were largely stable because of the recent plunges in value at the hub, Mont Belvieu prices to their lowest levels this year.

Conway had the only two NGLs to experience price increases this week as ethane and C5+ rebounded to market corrected prices this week. However, both remained near their lowest prices for the year.

Ethane improved 6% at Conway to 13¢ per gallon (/gal), its second-highest price in more than a month. This resulted in a 24% improvement in margin, which was still theoretically negative. Mont Belvieu ethane dropped 9% to 36¢/gal, its lowest price since it was also 36¢/gal the week of April 8, 2009. The margin dropped 15%, but still remained strongly profitable.

The price of Conway C5+ rose 1% to $1.99/gal despite crude oil falling below $90 per barrel (/bbl), a clear indication of a price correction. The Mont Belvieu price fell 2% to $2.01/gal, its lowest price since it was $1.99/gal the week of Nov. 24, 2010.

Butane and isobutane prices dropped 4% at Mont Belvieu due to the decrease in crude prices. The price of butane was $1.54/gal, its lowest price since it was $1.53/gal the week of Oct. 21, 2010. Isobutane dropped to $1.70/

*(continued on page 3)*


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gal, which was its lowest level since the week of Nov. 17, 2010 when it was $1.69/gal.

The Conway prices moved at a similar path as their heavy NGL counterpart, C5+, as butane's prices was largely unchanged at $1.34/gal while isobutane dipped 1% to $1.51/gal. The isobutane price was the hub's lowest price since it was $1.42/gal the week of Sept. 8, 2010.

Propane prices had the largest drop at both hubs as the storage overhang and depressed European economy lowered export demand. This caused prices to drop 10% to 84¢/gal at Mont Belvieu and 7% to 66¢/gal at Conway. The Mont Belvieu price was the lowest since it was 81¢/gal the week of July 29, 2009 while the Conway price was the hub's lowest since the week of Aug. 26, 2009 when it was 65¢/gal. As a result, margins tumbled 9% at Conway and 13% at Mont Belvieu.

The theoretical NGL barrel fell 1% to $34.47/bbl at Conway with a 1% drop in margin to $25.64/bbl. The Mont Belvieu barrel price dropped 6% to $41.79/bbl with a 7% drop in margin to $32.68/bbl.

The most profitable NGL to make at both hubs remained C5+ at $1.72/gal at Conway and $1.73/gal at Mont Belvieu. This was followed, in order, by isobutane at $1.27/gal at Conway and $1.45/gal at Mont Belvieu; butane at $1.09/gal at Conway and $1.28/gal at Mont Belvieu; propane at 44¢/gal at Conway and 62¢/gal at Mont Belvieu; and ethane at a theoretical negative margin at Conway and 19¢/gal at Mont Belvieu.

What has been very interesting is that while crude and liquids prices have been struggling the past month, natural gas prices have largely improved in this time frame. Although gas prices saw their win streak end this week, prices were largely stable. What has been perplexing is that the market overstated the reasons for

**Current Frac Spread (Cents/Gal)**

| June 1, 2012 | Conway | Change from Start of Week | Mont Belvieu | Start of Week |
|---|---|---|---|---|
| Ethane | 12.50 | | 35.58 | |
| Shrink | 16.00 | | 16.53 | |
| Margin | -3.50 | 24.20% | 19.05 | -14.72% |
| Propane | 65.78 | | 84.38 | |
| Shrink | 22.08 | | 22.81 | |
| Margin | 43.70 | -8.86% | 61.57 | -13.19% |
| Normal Butane | 134.08 | | 153.90 | |
| Shrink | 24.99 | | 25.82 | |
| Margin | 109.09 | 0.23% | 128.08 | -4.98% |
| Iso-Butane | 151.25 | | 170.13 | |
| Shrink | 24.00 | | 24.80 | |
| Margin | 127.25 | -1.21% | 145.33 | -4.89% |
| Pentane+ | 199.05 | | 201.18 | |
| Shrink | 27.04 | | 27.94 | |
| Margin | 172.01 | 1.21% | 173.24 | -2.75% |
| NGL $/Bbl | 34.47 | -1.25% | 41.79 | -5.81% |
| Shrink | 8.83 | | 9.12 | |
| Margin | 25.64 | -0.83% | 32.68 | -7.12% |
| Gas ($/mmBtu) | 2.41 | -2.43% | 2.49 | -0.80% |
| Gross Bbl Margin (in cents/gal) | 57.32 | -1.23% | 74.66 | -7.54% |
| **NGL Value in $/mmBtu** | | | | |
| Ethane | 0.69 | 6.11% | 1.96 | -8.77% |
| Propane | 2.28 | -6.80% | 2.93 | -10.16% |
| Normal Butane | 1.45 | -0.28% | 1.66 | -4.30% |
| Iso-Butane | 0.94 | -1.40% | 1.06 | -4.31% |
| Pentane+ | 2.54 | 0.70% | 2.56 | -2.48% |
| Total Barrel Valuein $/mmbtu | 7.90 | -1.58% | 10.17 | -6.50% |
| Margin | 5.49 | -1.20% | 7.68 | -8.21% |

**NGL PRICES**

| Mont Belvieu | Eth | Pro | Norm | Iso | Pen+ | NGL Bbl |
|---|---|---|---|---|---|---|
| May 23 - 29, '12 | 35.58 | 84.38 | 153.90 | 170.13 | 201.18 | $41.79 |
| May 16 - 22, '12 | 39.00 | 93.92 | 160.82 | 177.80 | 206.30 | $44.37 |
| May 9 - 15, '12 | 40.63 | 100.48 | 167.28 | 182.38 | 213.13 | $46.33 |
| May 2 - 8, '12 | 37.45 | 102.74 | 173.62 | 190.02 | 219.04 | $47.04 |
| April '12 | 45.55 | 119.39 | 189.84 | 203.99 | 237.95 | $52.78 |
| March '12 | 50.09 | 125.86 | 192.84 | 207.42 | 245.13 | $54.99 |
| 1st Qtr '12 | 53.93 | 125.90 | 192.36 | 204.32 | 238.95 | $55.05 |
| 4th Qtr '11 | 84.49 | 144.13 | 188.16 | 227.18 | 224.44 | $61.34 |
| 3rd Qtr '11 | 76.03 | 153.87 | 188.27 | 208.52 | 237.59 | $61.59 |
| 2nd Qtr '11 | 75.14 | 149.59 | 186.75 | 202.07 | 248.23 | $61.42 |
| May 25 - 31, '11 | 70.65 | 149.53 | 182.50 | 199.90 | 248.18 | $60.44 |
| **Conway, Group 140** | **Eth** | **Pro** | **Norm** | **Iso** | **Pen+** | **NGL Bbl** |
| May 23 - 29, '12 | 12.50 | 65.78 | 134.08 | 151.25 | 199.05 | $34.47 |
| May 16 - 22, '12 | 11.78 | 70.58 | 134.45 | 153.40 | 197.66 | $34.90 |
| May 9 - 15, '12 | 13.04 | 77.54 | 141.00 | 165.10 | 200.36 | $36.78 |
| May 2 - 8, '12 | 10.44 | 78.36 | 145.44 | 179.22 | 210.24 | $37.73 |
| April '12 | 14.42 | 90.99 | 160.18 | 190.26 | 230.04 | $42.30 |
| March '12 | 29.33 | 107.37 | 172.94 | 193.41 | 241.34 | $48.21 |
| 1st Qtr '12 | 26.93 | 103.34 | 168.65 | 184.75 | 227.16 | $45.92 |
| 4th Qtr '11 | 34.29 | 129.43 | 160.82 | 204.27 | 196.08 | $48.23 |
| 3rd Qtr '11 | 46.69 | 143.07 | 166.30 | 199.68 | 210.98 | $53.06 |
| 2nd Qtr '11 | 52.63 | 139.38 | 170.76 | 192.47 | 236.00 | $55.34 |
| May 25 - 31, '11 | 49.08 | 140.00 | 166.13 | 182.00 | 236.65 | $54.35 |

(Above) Data Provided by Intercontinental Exchange. Individual product prices in cents per gallon. NGL barrel in $/42 gallons | Source: Frank Nieto

(Left) Price, Shrink of 42-gal NGL barrel based on following: Ethane, 36.5%; Propane, 31.8%; Normal Butane, 11.2%; Isobutane, 6.2%; Pentane+, 14.3%, Fuel, frac, transport costs not included. Conway gas based on NGPL Midcontinent zone, Mont Belvieu based on Houston Ship Channel.

Shrink is defined as Btus that are removed from natural gas through the gathering and processing operation. Source: Frank Nieto


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both a decline and a rally, according to Barclays Capital.

"The move lower was driven by a consensus view that supply would continue to grow on a sequential monthly basis despite the cut in drilling, that coal displacement would not be sufficient to burn off the storage surplus, and the bearish result would be an early fill of storage that would send prices to something approaching zero. The rally has been propelled by a view that all these factors are incorrect: supply is now declining, that coal displacement is in fact large enough, and that the risk of an early fill of storage has passed," according to the investment firm's Commodity Briefing for May 25.

Barclays Capital added that they anticipate the rally to be largely self-correcting as prices will be unable to withstand a $2.50 per million Btu (/MMBtu) level as that will slow coal displacement. According to the report, prices will need to stay closer to the $2.00/MMBtu level to spur coal displacement out West and work off excess storage levels.

Natural gas in storage for the week increased 71 billion cubic feet to 2.815 trillion cubic feet (Tcf) from 2.744 Tcf the previous week. This was 35% greater than the 2.083 Tcf figure reported last year at the same time and 35% above the five-year average of 2.091 Tcf.

While the majority of the United States is expected to see an increase in cooling demand next week, this demand is expected to be tempered by the Northeast experiencing cooler than normal early June temperatures. The West Coast is also expected to experience cooler than normal weather with the rest of the country experiencing warmer than normal temperatures.

– Frank Nieto

## Companies Need To Begin Preparing ... *Continued from page 1*

"The CFTC has yet to really define what is a swap or a hedge, as well as who are dealers, traders and hedgers," Paul Pantano Jr., a partner at Cadwalader, Wickersham & Taft LLP, said while noting that the commission has five separate definitions of hedging transactions.

The rules on position limits for various participants are particularly onerous as the rules may identify the same transaction as both a hedge and a swap, which would seemingly force companies to completely alter their operations. "What you think is a hedge may not be considered one by the CFTC," Reilley said.

He added that it is likely that the rules, as they stand today, will result in a less liquid market with fewer participants as it will make it more difficult for companies to do business.

"This process is a lot more complicated than either Congress or the CFTC assumed," Pantano said. He added that when the rules were being created that the CFTC didn't consider industry input.

This has resulted in unrealistic expectations for monitoring the markets, such as reporting hedge exemptions on a real-time basis. Reilley noted that although he is familiar in this aspect of the market, he can't figure out how to provide such data to the CFTC. The good news is that members of the CFTC seemingly realize this error and are working to correct this slight, which should lead to more rational rules and regulations, both Pantano and Reilley said.

Badar Khan, president, upstream and trading at Direct Energy, stated that the costs for compliance might also cause some companies to leave the market. "There are times when rules become so complex that people exit markets. Our company will spend tens of millions of dollars, mainly in IT, to comply with Dodd-Frank."

For this reason, he said he is pleased that the CFTC is taking its time with implementing the rules and regulations.

Although the rules will make it more difficult for companies doing swaps and hedges, Bill Hederman, director, regulatory compliance, energy and resources at Deloitte & Touche LLP, noted that Dodd-Frank isn't primarily about energy reform, but financial reform.

"The energy industry has a habit of thinking that government regulations are designed to hurt them, but that is obviously not always the case. The CFTC is learning and is more understanding of how its regulations are affecting the industry," he said.

All of the members of the panel agreed that while it was likely that some of the rules and regulations associated with the act would change after the CFTC worked with energy companies and traders as a result of ongoing lawsuits on position limits, they added that it is important for companies to prepare as best they can for CFTC oversight of swap and hedging markets.

"I believe there is a 50-50 chance that position limit rules will be overturned by the courts. It is very difficult to overturn regulations, though we have seen companies having success through the court system lately," Pantano said.

"Companies should focus as much of their efforts as possible on areas of the act that they are most certain will be enacted before the pieces fall in place," Reilley said.

"The time for meetings has passed. Companies need to begin taking action to prepare for CFTC oversight," Hederman added. – Frank Nieto


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# INSIDE LOOK AT PROCESSING

## MarkWest Completes Keystone Midstream Services Acquisition

MarkWest Energy Partners. L.P. (NYSE:MWE) closed the previously announced acquisition of Keystone Midstream Services LLC from Stonehenge Energy Resources L.P., and subsidiaries of Rex Energy Corp. (NASDAQ:REXX) and Sumitomo Corp.

The acquisition consideration was $512 million. Keystone's existing assets are located in Butler County, Pennsylvania and include two cryogenic gas processing plants totaling 90 million cubic feet per day of processing capacity, a gas gathering system and associated field compression. Concurrent with the closing of the transaction, Rex Energy and Sumitomo have dedicated an 895 square mile area to MarkWest. MarkWest will gather and process rich gas, and fractionate the natural gas liquids under long-term, fee-based agreements.

MarkWest's acquisition of Keystone expands the Partnership's leading position in the liquids rich Marcellus Shale area into northwest Pennsylvania and eastern Ohio. **– Business Wire**

## Sasol Inaugurates Natural Gas Processing Facility In Mozambique

Sasol Petroleum International, the upstream subsidiary of Sasol Limited, inaugurated its expanded central processing facility (CPF) in Temane, Mozambique. The capacity of the CPF was increased to 183 megajoules per annum (MGJ/a) of natural gas, from its initial design capacity of 120 MGJ/a, in order to meet increased market demand in Mozambique and South Africa.

Sasol's partners in the CPF are Companhia Mozambicana de Hidrocarbonetos S.A. (CMH), representing the Mozambican government, and the International Finance Corporation (IFC).

The CPF began full scale production of 120 MGJ/a in 2004 and is connected to the South African market via a 865 kilometre cross-border pipeline. From the additional 63 MGJ/a resulting from the expansion, the Mozambican market was allocated 27 MGJ/a to meet their increased local demand, while 27 MGJ/a was allocated to the South African market. The remaining 9 MGJ/a represents the royalty gas allocated to the Mozambican government.

"In Africa, we have both unique challenges as well as great possibilities. Overcoming these challenges requires a collective effort. In Southern Africa, in particular, it is important that we continue to work in partnership to find workable and sustainable solutions. These solutions are not only to address the region's developmental goals but also to achieve the continent's longer term growth aspirations.

"The significant discoveries of natural gas in the northern part of Mozambique, in addition to its substantial coal reserves, will not only change the future course of development for the country, but I am sure that these developments will also serve to benefit the entire region," said Sasol's chief executive officer, David Constable, at the inauguration of the CPF expansion in Temane.

The expansion project, at an investment cost of $220 million, came in under budget while achieving excellent safety statistics. The project employed over 600 Mozambicans and was an important source of job creation in the area. Furthermore, and of significant value to the Mozambican economy, US$64 million in goods and materials were procured from Mozambican suppliers.

"Such a complex cross-border project with multiple stakeholders would not have been possible without the strong partnership and the healthy spirit of cooperation that exists between the Mozambican and South African governments, coupled with the favourable investment conditions in Mozambique," added Constable.

## Rig Count Decreasing As Gas Surplus Pushes Prices Down

The price drop in U.S. natural gas caused by last year's overproduction is encouraging power generation companies to switch from coal to gas, according to analysis released by business intelligence provider GlobalData.

However, their analysis indicates that the reaction of a number of E&P companies in the U.S. to the price drop is to focus on drilling in oil or liquid-rich areas while natural gas prices remain unattractive.

Natural spot gas prices fell from $4.54 per million Btu (/MMBtu) on January 3, 2011 to just $2.05/MMBtu at the Henry Hub as on April 27, 2012. This drop in price has been attributed to an over pro-

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duction of natural gas in relation to market demand.

The current low price for natural gas is expected to drive an increase in gas consumption, especially in power generation and industrial sectors over the next couple of years, assuming there are no major changes to residential or consumer gas consumption levels.

The low cost of gas, in combination with its lower carbon content, has seen a number of energy generation companies state intentions to replace coal-based thermal power plants with their gas-burning counterparts. Companies like Xcel Energy Inc, Calpine Corp and Progress Energy Inc. have all announced plans to close down or convert coal-fired plants in favour of gas alternatives.

The low price of natural gas is also affecting the petrochemical industry, with companies switching to gas from naphtha, a relatively expensive oil-based feedstock. Dow Chemical Company and Shell Chemical, amongst others, have plans to invest in the US's petrochemical capacity in order to take advantage of the country's natural gas resources.

To counter the drop in U.S. natural gas prices, several U.S. E&P companies are moving away from shale gas production, with the national number of gas rigs reduced by 11 to 627 on April 2012. However, the number of oil rigs in the U.S. has increased by 11, bringing the total figure to 1,329.

This slash in U.S. gas production in 2012 will mark a reduction of about 2.6% on 2011 levels, with GlobalData analysis indicating the possibility of a further decline of 0.5% to 1% over the next couple of years.

## Canada's Oil & Gas Industry Will Need To Fill At Least 9,500 Jobs By 2015

Canada's oil and gas industry will need to fill a minimum of 9,500 jobs by 2015, according to a report released by the Petroleum Human Resources Council of Canada.

Highlights from the report, Canada's Oil and Gas Labour Market Outlook to 2015, state that between now and 2015, Canada's oil and gas industry is at risk of losing about three per cent of its workforce overall, because of persistently low natural gas prices. However, two primary factors - growth in certain operations and age-related attrition across the industry - will offset most job losses and in fact contribute to increased overall hiring needs.

Changes in the number of jobs will not be equal across all industry sectors. For example, the oil and gas services sector, although impacted by commodity price volatility, will still need to fill about 5,400 jobs between 2012 and 2015. The exploration and production (E&P) sector, hardest hit by prolonged low natural gas prices, may see some workforce contraction but will also experience skill and experience gaps as it loses workers due to

retirements and turnover, especially for industry-specific roles.

By 2015, employment in the oil sands sector is projected to increase by 29 per cent over 2011 levels, or approximately 5,850 jobs. The pipeline sector will add about 530 jobs over the same period. Both sectors will also need to do significant hiring to replace retiring workers and for turnover.

"This is a complex labour story," commented Cheryl Knight, Executive Director and CEO of the Petroleum HR Council. "Hiring will increase, but total number of jobs will remain relatively flat. Certain sectors and operations will add jobs, while others will lose some positions. And employee turnover is the wild card that could have recruiters working to fill hundreds of additional job openings over the next four years."

Knight continued: "At a more granular level, we're seeing high demand for - and reduced supply of - skilled workers in specific occupations, many of which are unique to the oil and gas industry. Retirements are the greatest cause of this growing - and alarming - skill and experience gap. The technical capabilities and knowledge of retiring, experienced workers are just not easily replaced by new entrants."

Canada's Oil and Gas Labour Market Outlook to 2015 includes labour demand projections for 38 core occupations in Canada's oil and gas industry, within four industry sectors (E&P, oil sands, oil and gas services and pipeline). Analysis is also provided for key operating regions in Western Canada (British Columbia, Alberta and Saskatchewan) as well as for the rest of Canada. The Council is the primary resource to address workforce development and labour market issues in the Canadian petroleum industry.

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# PIPELINES & TECHNOLOGY

## NTSB: Enbridge Workers Not Notified Of 911 Call During 2010 Oil Spill

The National Transportation Safety Board (NTSB) recently released further details about the July 25, 2010, oil spill from Enbridge Energy Partners' Line 6B pipeline, including documentation that workers twice restarted the pipeline despite 16 high-priority alarms being sounded in its control room to alert operators of issues on the pipeline.

The NTSB has not yet released its complete report, but the new documents found that more than 1 million gallons of crude spilled into the Kalamazoo River for more than 17 hours as control-room operators were unaware of the incident. Workers in Enbridge's control room were preparing to restart the pipeline for a third time when they were informed of the spill by a local utility.

A timeline of the incident found that the spill followed a scheduled shutdown of the pipeline and four stations: Griffith, Laporte, Niles and Mendon at 6 p.m. on July 25, 2010. This was followed shortly thereafter by an abrupt drop in pressure. The Marshall station was shut down following an alert for the drop in pressure.

The control room in Edmonton, Canada, was then alerted to a discrepancy in flows between the Griffith and Marshall pump stations. According to the timeline, the pipeline controller called the material balance system analyst to investigate the alarm and was told that it was due to column separation, or an air bubble, and that the condition would persist until the pipeline was restarted in approximately 10 hours.

Shortly after this discussion, the pipeline controller was replaced on their shift by another controller who was not informed of the previous alarms.

By approximately 9:30 p.m., the first 911 call was placed in Marshall City, Mich., complaining of a gas odor. This prompted the local city and township fire departments to investigate. However, no call was placed to any utilities and no spill or leak was detected.

Not having received any notifications of the 911 call, the Enbridge workers restarted the pipeline and Griffith station as scheduled at 4 a.m. on July 26. Several minutes later two five-minute and one 20-minute volume balance alarms were sounded informing the pipeline controller of an issue between the Griffith and Marshall stations.

The controller called the material balance system analyst to discuss these alarms and both noted that there was a slight increase in pressure, which they believed was evidence that the system was overcoming the earlier column separation. Given the situation, the workers decided it best to wait to see if the issue was being corrected.

Shortly after 5 A.M., workers in the control room decided to once again shut down the pipeline following several alarms sounding in the previous 30-minute interval. These alarms included another five-minute and 20-minute volume balance alarm along with a two-hour volume balance alarm.

The pipeline was restarted a second time at 7 a.m. after discussions by control room workers, who attributed the column separation issues as being caused by the Niles pump station being bypassed for an inline inspection tool.

Several minutes after this second restart, another two-hour volume balance alarm was sounded between the Griffith and Marshall pump stations, followed by several other alarms between the Marshall and end-of-the-line stations and again between the Griffith and Marshall stations.

Shortly before 8 a.m., the pipeline was shut down once again with control-center workers deciding that the issues were a result of a lack of pressure. By approximately 10 a.m., a technician was dispatched to the Marshall station to investigate for leaks. The technician verified low suction and discharge pressures, but found no leaks.

At approximately 10:15 a.m., the control center began to investigate the population density of Marshall to determine if calls should been received about odors or leaks.

Roughly one hour later the control center received a call from Consumers Energy, a local gas utility, reporting approximately 46 customer complaints of odors in the vicinity of the pipeline.

| KEY NORTH AMERICAN HUB PRICES | |
|---|---|
| 2:30 PM CST / May 31, 2012 | |
| Gas Hub Name | Current Price |
| Carthage, TX | 2.26 |
| Katy Hub, TX | 2.33 |
| Waha Hub, TX | 2.29 |
| Henry Hub, LA | 2.35 |
| Perryville, LA | 2.28 |
| Houston Ship Channel | 2.33 |
| Agua Dulce, TX | 1.88 |
| Opal Hub, Wyo. | 2.23 |
| Blance Hub, NM | 2.28 |
| Cheyenne Hub, Wyo. | 2.20 |
| Chicago Hub | 2.35 |
| Ellisburg NE Hub | 2.39 |
| New York Hub | 2.45 |
| AECO, Alberta | 1.97 |

Source: Bloomberg


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At this point, Enbridge initiated emergency response measures that resulted in a company technician confirming oil was on the ground in Marshall.

The NTSB is expected to release its final report this summer. It should be noted that false alarms are common on pipeline operations, and without any notification of an incident it was more difficult for the Enbridge workers to determine that the alarms were a result of a leak and not an air bubble.

"The NTSB continues to work on its final report, which will provide the agency's analysis of these facts and circumstances and arrive at their determinations as to probable cause and contributing factors of the leak and circumstances around it. Until the final report is published, we do not intend to pre-empt those findings by commenting on specific details," Enbridge stated in a news release.

The company noted that its internal investigation of the incident led to the implementation of operational and procedural changes while noting that at the time of the incident it met or exceeded all applicable regulatory and industry standards in its operations.

"As a result of our detailed investigation into the accident, and as part of our ongoing continuous improvement efforts, we have taken steps to address lessons learned and make incremental improvements aimed at preventing a similar accident from happening again in the future," the company continued.

– Frank Nieto

## Banner Transportation, Kinder Morgan Announce Open Season To Move Crude To Oklahoma

Banner Transportation Company LLC and Kinder Morgan Pony Express Pipeline LLC, a subsidiary of Kinder Morgan Interstate Gas Transmission LLC, launched a joint open season to solicit shipper interest for crude oil transportation service on their combined facilities.

Those facilities will include a new 330-mile Banner pipeline originating in the Bakken oil production area near Baker, Mont., and terminating near Guernsey, WY. Under the joint service, Banner will deliver oil into the Pony Express pipeline near Guernsey for final delivery to the Phillips 66 Ponca City refinery at Ponca City, OK and various points in Cushing, OK. The companies expect to transport up to 100,000 barrels per day of crude oil under a joint tariff beginning in the fourth quarter of 2014.

In the joint open season with Banner, Banner and Pony Express are soliciting shipper interest sufficient to support expansion and construction of the Banner system, conversion of a portion of the Pony Express pipeline from natural gas to crude oil service and construction of a 260-mile Pony Express extension to Cushing.

Parties interested in reviewing the details of the proposed Banner-Pony Express service may contact John Eagleton at Kinder Morgan Pony Express at (303) 914-4702, Mike Smith at Kinder Morgan Pony Express at (303) 763-3484, Bob Mishler at Kinder Morgan Pony Express at (303) 914-7762, Jim Suttle at Banner at (580) 616-2050 or Kent Evatt at Banner at (580) 616-2052.

## Strategies For Getting Crude To Market

In some parts of the country, no definitive blueprint exists for getting crude to market. However, some developments are in the works that should be more cost- and time-efficient for producers.

A panel of infrastructure experts at Hart Energy's DUO Conference and Exhibition in Denver earlier this month talked about achievements and challenges in rail takeaway, trucking and pipeline projects.

Greg Haas, Hart Energy's manager of research, kicked off the session with a historical review of domestic onshore oil production, particularly in the Rocky Mountain region.

Haas said that he sees the crude value chain changing for the positive throughout the upstream, midstream and downstream sectors. On the upstream side, Haas cited U.S. Department of Energy statistics that indicate onshore oil production began to trail off in the early 1980s, at which time offshore was ramped up and reigned until recent years.

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Onshore oil production, however, is back in a big way.

"In post-Macando moratoria and in recent years since 2009 and 2010, we've seen offshore production fall while onshore production has grown largely because of unconventional sources," he said.

Haas said that three-quarters of domestically produced crude barrels are transported around the country to the refining network by pipelines. "But you'll see rail tankers, truck tankers and waterborne tankers. These are all delivering crude across the country to the refining network," he said.

Three-quarters of the refining fleet, Haas said, is along the coastal parts of the nation. "In the upward and inland portions of the country, where only a quarter of refining capacity exists, we're seeing big green. We have 4% of U.S. refining capacity in and around the Rocky Mountains seeing some of the highest margins -- and in fact the highest long-term margin -- in the refining industry. And the midcontinent is nothing to slouch at either," he added.

Hart's quarterly North American production surveys follow the Department of Energy's PADD numbering system, which includes the Rocky Mountains in PADD 4. Haas said the latest report shows good growth in PADDs 2, 3 and 4, respectively the Midwest, the Gulf Coast the Rocky Mountains.

Increased production values out of these regions translate into refinery crude-acquisition cost advantages. For the last three years, PADD 2 and PADD 4 have had below-average acquisition costs, Haas pointed out.

For the Rockies, the news gets even better. "From a crack-spread perspective the Rockies are literally and figuratively on top of the refining world," Haas said.

| RESIN PRICES – MARKET UPDATE – MAY 31, 2012 | | | | | |
|---|---|---|---|---|---|
| TOTAL OFFERS: 20,172,768 lbs | | SPOT | | CONTRACT | |
| Resin | Total lbs | Low | High | Bid | Offer |
| HDPE - Inj | 4,813,268 | 0.595 | 0.66 | 0.575 | 0.615 |
| PP Homopolymer - Inj | 3,930,736 | 0.65 | 0.74 | 0.64 | 0.68 |
| LDPE - Film | 2,788,232 | 0.65 | 0.72 | 0.65 | 0.69 |
| HDPE - Blow Mold | 2,222,300 | 0.64 | 0.68 | 0.58 | 0.62 |
| PP Copolymer - Inj | 2,132,000 | 0.625 | 0.8 | 0.66 | 0.7 |
| LLDPE - Film | 1,261,840 | 0.66 | 0.75 | 0.62 | 0.66 |
| HMWPE - Film | 1,115,932 | 0.66 | 0.7 | 0.62 | 0.66 |
| LDPE - Inj | 1,104,368 | 0.68 | 0.74 | 0.655 | 0.695 |
| GPPS | 380,000 | 0.82 | 0.82 | 0.84 | 0.89 |
| HIPS | 380,000 | 0.96 | 0.96 | 0.96 | 1.01 |
| LLDPE - Inj | 44,092 | 0.67 | 0.67 | 0.635 | 0.675 |

Source: Plastics Exchange – www.theplasticsexchange.com

The crack spread in the Rockies was $29.26 in the second week of May, and the five-year average was $20.08. Both figures outpace comparable values in the U.S. and worldwide, according to Haas.

A crack spread is calculated by determining the value of processing three barrels of crude into two barrels of gasoline and one barrel distillate.

## Crude By Rail

Christopher Keene, the president and chief executive and the founder of Rangeland Energy LLC, talked about the company's new COLT (Crude Oil Loading Terminal) Hub in Williams County, N.D.

The COLT Hub, which opened earlier this month, features a rail-loading facility, a truck station and a tank farm. The hub has eight truck bays, five 120,000-barrel tanks, two 8,7000-foot train loops, 21 miles of 10-inch pipe and a 120,000-barrel tank at Ramberg/Beaver Lodge.

According to Keene, the hub's rail-loading facility has four anchor customers: Tesoro, Sunoco Logistics, Flint Hills Resources and Ustra/US Oil Refining. The COLT Connector Pipeline has firm contracts for 35,000 barrels per day and offers an opportunity for bi-directional growth with a capacity exceeding 70,000 barrels per day.

"Crude oil production is growing at an exponential rate in North Dakota. I've been in this business a long time and I've never seen this happen, and that does create logistical constraints," he said. "But that's an opportunity for guys like me."

Keene said crude-by-rail has been increasing in the two years he has been working in North Dakota. At first, rail accounted for about 20% of the crude shipped. Rail now handles about one-third of transported crude, he said.

"North Dakota crude continues to be discounted when compared with WTI or Brent," he said. "The point is this: If you can get your crude oil out of North Dakota and, let's say, down to the Gulf Coast, there's quite a bit of money to be made in making that move."

Rangeland was founded in November 2009. The company's strategic focus is to develop, acquire, own and operate a portfolio of midstream assets with initial focus in North Dakota's Bakken shale.

## From Truck To Pipeline

Tad True, the vice president of Belle Fourche and Bridger Pipelines, talked


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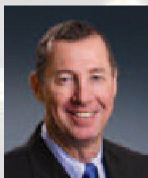

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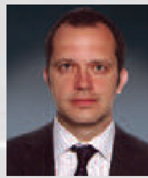

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about the game-changing Four Bears Pipeline in the Bakken.

The pipeline, which was brought into service in September, delivers crude to the Butte Pipeline terminal in Baker, Mont., and the Bakken Oil Express Rail Terminal in Dickinson, Mont. Four Bears' capacity is 80,000 barrels per day to Baker and 30,000 barrels per day to the Bakken Oil Express.

True offered a before-and-after vignette involving the Four Bears Pipeline.

"Without Four Bears what used to happen is that you'd have a well in upper McKenzie County, and the operator would call up a truck. That truck would load about 200 barrels into its tanker, drive down Highway 22, cross Interstate 94, and unload at our Fryburg, Mont., terminal. Then we'd ship it to market. Then that truck goes back up Highway 85, crosses Highway 23 and does the whole thing over again," he said. "Round trip was 232 miles just to deliver 200 barrels of oil at a cost of about $5 per barrel."

With Four Bears, the routine has changed drastically. Because the pipeline delivers the crude directly to Fryburg from McKenzie County, truck mileage is reduced to about 30 miles round trip. The total trucking cost, True said, is reduced to $1.50 per barrel. "Obviously, this results in two things. Number one, a reduction of wear and tear on roads, and number two, better snapbacks for producers and royalty owners," he added.

True surprised the DUO audience with the announcement of a joint project between Belle Fourche Pipeline and Kinder Morgan involving the Pony Express Pipeline.

Belle Fourche will build 135 miles of new pipe from Baker to its Donkey Creek station in the Powder River Basin and Kinder Morgan will extend the pipeline to Cushing, Okla.

"We've also committed to expanding our phase-one construction from a 12-inch main line to a 16-inch main line," he added.

The Pony Express will start out with a 110,000 barrels-per-day capacity, expandable to more than 210,000 barrels per day, True said. – Mike Madere

## Fiberspar Announces Expansion Into Rockies

Fiberspar Corp., a manufacturer of composite, spoolable pipe for the oil and gas industry, broke ground for a new sales and manufacturing center located in Johnstown, Colorado.

Fiberspar's new 165,000 sq ft center will increase total capacity by over 50% and help drastically reduce lead time and transportation costs to serve the Bakken, Niobrara and the overall oil and gas market in the Rockies region.

"We're extremely excited to expand our operations in Northern Colorado," said Peter Quigley, Fiberspar's chief executive. "This expansion into the Rockies is a reflection of continued industry acceptance of Fiberspar LinePipe as a lower installed and operating cost alternative to welded steel pipelines for in field gathering and injection applications. In addition to total installed costs savings of over 20% compared to welded steel, Fiberspar LinePipe does not corrode and installs in half the time, requiring fewer people and less equipment – all leading to a safer, more efficient and lower cost installation."

In the past eight years, more than 50 million feet have been installed by over 450 oil and gas producers in North America, to tie in the production from over 15,000 producing oil and gas wells, making Fiberspar one of the fastest growing oil field service companies in North America. Fiberspar offers LinePipe in sizes from 21/2" to 61/2" with pressures ranging from 300 psi to 2,500 psi and temperature ranges from -29°F to 180°F.

# NEWS & TRENDS

## Sumitomo, Saudi Aramco To Proceed With $7B Petrochem Expansion

Sumitomo Chemical Co. of Japan and Saudi Aramco will proceed with the $7 billion expansion of the Rabigh Refining and Petrochemical complex in western Saudi Arabia.

The project is expected to come online in the first half of 2016 and will expand the ethane cracker unit and build a new aromatics complex, which will consume 30 million cubic feet per day of ethane and around 3 million tonnes per year of naphtha as feedstock. The expansion will produce ethylene propylene rubber, thermoplastic polyolefin, methyl methacrylate monomer, polymethyl methacrylate, low density polyethylene, benzene, acetone etc.

Sumitomo and Saudi Aramco own 37.5% each of the complex with the remaining 25% being listed on the Saudi Stock Exchange. Currently the complex has a 400,000 barrels per day refinery capable of producing naphtha, kerosene, gasoline, diesel and fuel oil as well as ethylene.


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## Mitsui Chemicals, Sinopec Form EPT Joint Venture In China

Japan's Mitsui Chemicals Inc. and China Petroleum & Chemical Corp. (Sinopec) formed a new equal partnership joint venture company, Shanghai Sinopec Mitsui Elastomers Co. Ltd., to manufacture and distribute EPT (ethylene-propylene-diene terpolymer).

The two companies conducted joint feasibility studies following the signing of a letter of intent in December 2009 and received approval from the Chinese government to establish a joint venture company.

The joint venture company will adopt state-of-the art metallocene catalyst technology and build one of the world's largest and most advanced EPT plants in China's Shanghai Chemical Industry Park.

The rapid expansion of China's automobile industry and development of its social infrastructure (railways, etc.) are expected to significantly increase demand for EPT used in these industries. The joint venture company will target early establishment of manufacturing and distribution to meet needs of a rapidly growing Chinese market.

## Iran Planning $25B Petrochemical Hub

The National Petrochemical Co. of Iran is planning to invest $25 billion to build a petrochemical hub in Chabahar Port in the southeastern portion of the country, according to a report in the *Tehran Times*.

Despite international sanctions against Iranian exports, the country is still experiencing high levels of demand for its exports. As a result the company is planning to build nine petrochemical projects this year that will increase the country's output by 8 million tons. Further details were not disclosed.

## Origin Energy Secures Funding For Ausralian LNG Project

Origin Energy Ltd. announced that Australia Pacific LNG Pty Ltd. has signed agreements with a syndicate of domestic and international commercial banks and export credit agencies for an US$8.5 billion project finance facility.

The project finance facility provides funding for the downstream parts of the project, including the liquefaction facilities on Curtis Island near Gladstone in Queensland, and will underpin the development of Australia Pacific LNG's coal seam gas (CSG) to LNG project. The facility is subject to a final investment decision (FID) being taken on the second phase of the Australia Pacific LNG project.

"Today's announcement is another major milestone for Australia Pacific LNG, and paves the way for development of one of Australia's largest LNG export projects," Origin managing director, Grant King said in a news release.

"Australia Pacific LNG's ability to secure US$8.5 billion in project finance from Australian and international lenders evidences the strength and quality of the project.

"Substantial progress continues to be made by Australia Pacific LNG across all areas of the CSG to LNG project and we remain on track to take a final investment decision on the second phase of the project by mid-2012.

"Given the timing of Australia Pacific LNG's phase one FID, we believe our project schedules and budgets were based on a solid understanding of current regulatory requirements and the cost environment. We remain confident that the project remains on schedule and budget to deliver first gas in 2015, as expected," King said.

### Project finance

The US$8.5 billion project finance facility was signed by Australia Pacific LNG, the Export-Import Bank of the United States (US EXIM), The Export-Import Bank of China (China EXIM) and a syndicate of domestic and international commercial banks.

The commercial banks and US EXIM have signed the definitive project finance documentation with Australia Pacific LNG for 16 and 17 year terms respectively. China EXIM has signed a commitment letter agreeing to the key terms of the project finance facility, with its signing of the definitive documentation expected to occur shortly. Draw down under the project finance facility, which is subject to customary conditions precedent, including certain government approvals, will be made progressively over the construction phase of the project.

Origin executive director, finance and strategy, Karen Moses said, "We are very pleased with the success of the US$8.5 billion project finance facility for Australia Pacific LNG. It represents one of the largest project finance facilities in Australia and is testament to the quality of the project, the strength of the joint ven-


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ture partners and financiers' confidence in the CSG to LNG industry.

"The substantial commitments from each of US EXIM and China EXIM demonstrate their support for the project's partners. The project also received strong support from major Australian banks as well as high level international commitment from a quality syndicate of European, Asian and Canadian institutions.

"Australia Pacific LNG was able to secure long-term finance with 16 and 17 year terms in a constrained environment, removing refinance risk from the project. The combination of a well structured transaction and continued diligence from all parties involved, have been key factors in the success of the project finance," Moses said.

While the facility is structured as non-recourse to Australia Pacific LNG shareholders, each shareholder has provided a several guarantee of its shareholding percentage of the debt during the construction phase. Origin expects that any assessment of its credit rating by credit rating agencies to be inclusive of Origin's share of project finance. The guarantees fall away following completion of the construction phase of the project subject to customary completion tests.

## SNAPSHOT

### Deloitte's Stanislaw: No Water, No Energy -- No Energy, No Water

Having enough water and energy supply are two of the world's most pressing needs, and demand for these two is increasing. They are inexorably linked as well. Solutions for one cannot be made without solutions for the other, says Dr. Joseph Stanislaw, an independent senior advisor to Deloitte.

He spoke at the latter's annual energy conference in Washington, D.C. on May 21. He and co-author William Sarni penned a paper on the many ways water and energy needs are woven together.

"I've been thinking about this problem for decades," Stanislaw told Hart Energy. "We have to take this very seriously. If we run out of oil that changes our lifestyle. But if we run out of water, we have no lifestyle."

The energy expert says a lot of NGOs (non-governmental organizations) are sounding the alarm on this topic. Stanislaw cited a host of water-related problems around the world. He said Atlanta faces serious clean-water shortage issues, as do the Middle East and China. Closer to home, the discussion by all the states about fracing is no longer so much about water contamination; it is really about having enough supply for frac use, for watersheds and for growing populations, he said.

Water has always been a free good for use by all, like the air we breathe, but Stanislaw said he wonders if it is perhaps time to change that paradigm, and begin to price water, so the market can regulate it.

"I am not sure regulation is the answer. You need a real market price so that people would change their behavior toward water and conserve it more. We all value clean water, but are the true costs of that being calculated?"

"Nearly everything that we consume, depend on, or enjoy is tied to water, especially energy. Unless we can manage energy and water, we will not likely be in a position to feed an increasingly hungry world," he and Sarni say. "The escalating demand for water, occurring in concert with upwardly spiraling demand for energy, raises questions about the energy industry's susceptibility to supply disruptions caused by water shortages, or difficulties in treating and managing existing water resources."

Increasing demands on water impact the world's ability to meet its energy needs. In parallel, the need for increasingly more water for agricultural, industrial and domestic uses requires more energy. A constraint in either resource limits the other, and this nexus of supply and demand poses substantial risks for virtually every government and every type of business.

Dr. Joseph Stanislaw, independent senior advisor, energy & sustainability, Deloitte LLP (Courtesy: Deloitte LLP)

"While many companies have strategies for human resources, marketing, risk management, etc., very few have energy strategies and water strategies, and even less have integrated energy-water strategies," the consultants said.

#### Here is a summary of some key points in their paper:

**Competition for energy and freshwater is becoming increasingly acute**

- U.S. Energy Information Administration estimates world energy demand will increase by 53% between 2008 and 2035.



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- Many countries today are extracting groundwater faster than it can be replenished -- a trend likely to continue as developing countries contend with population growth, economic development and urbanization, and the rise of the middle class.
- The global population is estimated to grow by about one billion people between 2010 and 2025, with economic development in emerging markets anticipated to catapult three billion people into the middle class.
- By 2030, two out of every three people likely will live in an area of high water stress, and the substantial shortfall between water supply and demand could reach as high as 40%.
- The 2011 second annual Carbon Disclosure Project Water Disclosure Global Report found 59% of responding companies identified water as a substantial risk to their businesses.

**While governments and businesses have grown accustomed to competing for energy, they are not so accustomed to vying for fresh water.**

- Energy and water are inseparable.
- A constraint in either resource limits the other, and this nexus of supply and demand poses substantial risks for virtually every government and every type of business.
- The effects of climate change are also exerting pressure on the fulcrum of the water/energy relationship.
- The popular consensus regarding freshwater is that when supplies dwindle, we can make or find more of it. The reality is that the amount of fresh and accessible water is static, and demands on this finite resource are increasing.

**The energy sector has an intense thirst**

- "Clean," "green" and "renewable" may connote low carbon emissions--they do not imply low water consumption.
- The utility sector is heavily water dependent, with most thermal power generation facilities needing vast amounts of water for cooling processes regardless of whether solar, uranium, coal or natural gas are used as the base fuels.
- Water is required to clean and process coal.
- The biofuels industry depends on vast amounts of water.

Oil and gas exploration and development also is a culprit, especially shale. Many water-management initiatives have been launched to apply cutting-edge techniques to manage water sourcing, increase re-use, enhance treatment processes, and safely store and transport process water.

– Leslie Haines

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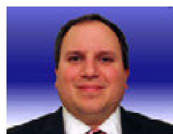

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