

Quebec Disaster: A Cautionary Tale For The Rail Industry

Authorities on both sides of the border review rail procedures, practices

BY MICHELLE THOMPSON | HART ENERGY

Fallout from the deadly crude train derailment in Quebec continues, which could have implications for crude-by-rail transport going forward.

It's been more than a month since a Montreal, Maine & Atlantic Canada Co. (MMA) train carrying crude derailed in Lac-Mégantic, Québec, July 6, killing dozens of townsfolk and sending the crude-by-rail industry into a tailspin. The catastrophe has prompted a closer examination of crude-by-rail transportation in the U.S. and Canada.

For starters, the Canadian Transportation Agency (CTA) announced August 13 that it will launch a review this fall of the adequacy of insurance coverage requirements for certificates of fitness required by federally regulated railways. The review was prompted after the derailment "raised important questions regarding the adequacy of third-party liability insurance coverage to deal with catastrophic events," the CTA said in a public release.

The CTA also yanked MMA's license, barring it from operating on Canada's tracks.



Humanitarian Disaster | Tankers exploded after what could be called the worst train disaster in Canadian history. Dozens of people were killed in the recent Montreal, Maine & Atlantic Canada Co. derailment in Lac-Mégantic, Québec.

"MMA and MMAC were given full and fair opportunity to demonstrate they have secured adequate third-party liability insurance coverage for their ongoing operations, which is a legislative requirement to operate a railway in Canada," Geoff Hare, chief executive of the CTA, said in a public release.

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HIGHLIGHTS FROM TODAY'S EDITION



FRANK NIETO

Editor, *Midstream Monitor*
& *MidstreamBusiness.com*

fnieto@hartenergy.com

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NGL PRICES & FRAC SPREAD | Week in Review

Ethane's Bad Fortune Poised To Change?

BY MICHELLE THOMPSON AND AMANDA HILOW | HART ENERGY

Conway ethane prices took a tumble this week due to a myriad of factors working to its disadvantage, but analysts are expecting the feedstock to make a quick comeback.

Ethane's frac spread was theoretically negative at Conway for the week ending August 12, though its margin was 2¢ per gallon (/gal) at Mont Belvieu, down from 3¢/gal the week prior. Conway was affected by a pipeline explosion near Iowa last week, which could back up the hub's supplies, En*Vantage Inc. said in its weekly report. The Sweeny #33 ethylene plant outage and weaker

CURRENT FRAC SPREAD (CENTS/GAL)				
August 19, 2013	Conway	Change from Start of Week	Mont Belvieu	Last Week
Ethane	20.46		24.26	
Shrink	21.48		21.95	
Margin	-1.02	1836.73%	2.31	-25.11%
Propane	98.54		101.11	
Shrink	29.68		30.32	
Margin	68.86	12.04%	70.79	8.06%
Normal Butane	129.22		126.08	
Shrink	33.60		34.32	
Margin	95.62	1.77%	91.76	-5.48%
Isobutane	141.33		133.00	
Shrink	32.27		32.97	
Margin	109.06	0.00%	100.03	-0.45%
Pentane+	209.50		212.72	
Shrink	35.93		36.71	
Margin	173.57	0.00%	176.01	-0.02%
NGL \$/Bbl	39.86	2.02%	40.38	0.63%
Shrink	11.84		12.09	
Margin	28.03	2.90%	28.29	0.77%
Gas (\$/mmBtu)	3.24	0.00%	3.31	0.30%
Gross Bbl Margin (in cents/gal)	63.82	3.48%	65.00	1.19%
Gross Bbl Margin (in cents/gal)				
Ethane	1.13	-5.01%	1.34	-2.84%
Propane	3.42	8.12%	3.51	5.61%
Normal Butane	1.40	1.30%	1.36	-3.98%
Isobutane	0.88	0.00%	0.83	-0.26%
Pentane+	2.70	0.00%	2.74	0.03%
Total Barrel Value in \$/mmbtu	9.52	2.31%	9.78	0.93%
Margin	6.28	3.55%	6.47	1.25%

NGL PRICES						
Mont Belvieu	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
Aug. 7 - Aug. 13, '13	24.26	101.11	126.08	133.00	212.72	\$40.38
July 31 - Aug. 6, '13	24.97	95.74	131.30	133.35	212.65	\$40.13
July 24 - 30, '13	25.37	92.76	127.48	131.68	209.32	\$39.36
July 17 - 23, '13	24.93	95.18	129.68	134.48	213.77	\$40.08
July '13	24.73	91.89	126.67	130.93	209.15	\$39.09
June '13	24.81	86.20	116.29	117.82	201.62	\$37.02
2nd Qtr '13	27.12	91.38	124.01	127.46	204.12	\$38.82
1st Qtr '13	25.68	86.42	157.72	166.41	222.63	\$42.07
4th Qtr '12	26.59	88.74	162.76	181.71	215.67	\$42.69
3rd Qtr '12	32.34	89.27	142.76	161.88	200.54	\$41.03
August 8 - 14, '12	35.84	94.14	142.28	155.57	208.18	
Conway, Group 140	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
Aug. 7 - Aug. 13, '13	20.46	98.54	129.22	141.33	209.50	\$39.86
July 31 - Aug. 6, '13	21.54	91.14	127.56	141.33	209.50	\$39.07
July 24 - 30, '13	22.48	87.70	125.54	158.08	207.34	\$39.01
July 17 - 23, '13	21.14	90.82	127.54	157.06	208.96	\$39.35
July '13	20.54	87.20	123.28	150.40	207.71	\$38.34
June '13	18.83	81.18	109.78	124.94	196.00	\$35.16
2nd Qtr '13	20.71	85.37	116.50	123.91	204.86	\$36.89
1st Qtr '13	23.94	81.81	153.43	160.39	222.63	\$41.11
4th Qtr '12	18.45	79.24	164.46	174.39	209.16	\$39.94
3rd Qtr '12	14.60	70.25	124.35	165.61	195.68	\$34.99
3rd Qtr '12	13.76	58.80	110.10	150.63	187.58	\$31.80
August 8 - 14, '12	18.95	74.81	122.01	160.28	199.72	

(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.

gas prices were also factors, the consulting firm added. However, it expects ethane's fortune to soon change.

"Pressure is building for ethane prices to snap back by at least 2¢/gal," En*Vantage writes in its August 15 report. "Ethane's equivalent cracking value to propane is at 48.9¢/gal this week compared to 44.4¢/gal last week and ethylene producers have the even more economic incentive to maximize ethane cracking, which should help lower ethane inventories over the next few months. As of [August 14], ethane is generating a net margin

NGL PRICES & FRAC SPREAD | Week in Review

of 43.7¢ per pound (/lb) compared to 32.9¢/lb for propane. N-butane is generating a margin of 25.9¢/lb.”

There are also indications that ethane rejection could be moderating, En*Vantage says. Right now, it estimates ethane rejection to be about 210 million barrels (bbl.) per day, excluding the Marcellus. En*Vantage had in recent reports estimated ethane rejection to be about 240 million bbl. per day. Its most recent approximation comes as propane frac spreads rise, causing some large integrated processors to reject less ethane in order to minimize possible propane loss.

En*Vantage adds that its balances continue to indicate ethane inventories will likely decrease for the next six months. They’ll reach 25 million bbl. per day by November if unscheduled outages don’t exceed 2% of U.S. ethylene capacity through November, En*Vantage says.

“Normally when ethane inventories drop below 25 million bbl., ethane frac spreads have shown significant improvement. However, any significant improvement in ethane frac spreads would immediately bring on more ethane supplies to the market as ethane rejection stops. Consequently, it is questionable that a rally in

ethane frac spreads can be sustained.”

According to U.S. Energy Information Administration (EIA) estimates, working gas in storage was 2,941 billion cubic feet (Bcf) as of August 2. While this represented a 96 Bcf net increase from the week prior, stocks were about 297 Bcf less year-over-year, the EIA added. Overall, storage was 20 Bcf above the five-year average of 2,921 Bcf. The National Weather Service (NWS) is forecasting warmer than normal

KEY NORTH AMERICAN HUB PRICES	
2:30 PM CST / August 15, 2013	
Gas Hub Name	Current Price
Carthage, TX	3.24
Katy Hub, TX	3.29
Waha Hub, TX	3.29
Henry Hub, LA	3.34
Perryville, LA	3.26
Houston Ship Channel	3.30
Agua Dulce, TX	3.59
Opal Hub, Wyo.	3.24
Blance Hub, NM	3.26
Cheyenne Hub, Wyo.	3.24
Chicago Hub	3.41
Ellisburg NE Hub	3.38
New York Hub	3.23
AECO, Alberta	2.24

Source: Bloomberg

temperatures along most of Central U.S. and the West Coast, as well as in Florida and parts of the Northwest.

Though those regions will be feeling the heat in coming days, much of the country has experienced an unseasonably mild summer. The weather might aid in correcting the balance with

RESIN PRICES – MARKET UPDATE – AUGUST 16, 2013					
TOTAL OFFERS: 11,454,848 lbs		SPOT		CONTRACT	
Resin	Total lbs	Low	High	Bid	Offer
HDPE - Blow Mold	3,000,072	0.67	0.72	0.65	0.69
PP Copolymer - Inj	1,908,196	0.69	0.89	0.8	0.84
LLDPE - Film	1,336,392	0.66	0.73	0.65	0.69
HDPE - Inj	1,102,300	0.65	0.74	0.67	0.71
LDPE - Inj	865,104	0.74	0.76	0.69	0.73
HMWPE - Film	837,748	0.72	0.75	0.71	0.75
PP Homopolymer - Inj	793,656	0.69	0.85	0.79	0.83
LDPE - Film	573,196	0.745	0.79	0.74	0.78
HIPS	570,000	1.015	1.025	0.98	1.03
GPPS	380,000	0.925	0.93	0.86	0.91
LLDPE - Inj	88,184	0.75	0.75	0.66	0.7

Source: Plastics Exchange – www.theplasticsexchange.com

the season’s increase in injection rates, and analysts say recovery might be in sight, according to the EIA.

The EIA reports that starting April natural gas working inventories at 31% below last year’s record of 2.477 trillion cubic feet (Tcf) has resulted in more open storage capacity for injections to occur.

In addition, a recent commodities report by Barclays suggests that inventories would only need to grow slightly more than 900 Bcf by the end of October to end the injection season with the expected 3.8 to 3.9 trillion cubic feet (Tcf) of storage—about 3.3% below the October 2012 level, but 1.1% above the five-year average. Inventories would need only to fill about 240 Bcf more than last year’s 688 Bcf, an average of 17 Bcf more per week, in order to meet the mark.

This should be an easy target.

“The unseasonably mild weather could certainly push storage levels beyond the forecasted 3.9 Tcf,” the commodities report said, and the EIA’s August *Short-Term Energy Outlook* reports the same.

The most profitable NGL to make at both hubs remained C₅₊ at \$1.74/gal at Conway and \$1.76/gal. at Mont Belvieu. This was followed, in order, by isobutene at \$1.09/gal at Conway and \$1/gal at Mont Belvieu; butane at 96¢/gal at Conway and 92¢/gal at Mont Belvieu; propane at 69¢/gal. at Conway and 71¢/gal. at Mont Belvieu; and ethane theoretically negative at Conway and 2¢/gal at Mont Belvieu. The theoretical NGL bbl. price rose 0.63% at Mont Belvieu to \$40.38 per barrel (/bbl.) with a 0.77% improvement in margin to \$28.29/bbl. At Conway, the theoretical NGL bbl. price rose 2% to \$39.86 with a 2.9% gain in margin to \$28.03/bbl.

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New EPA Regulations Can Add 'Green' To The Bottom Line

BY SHERI VANHOOSER AND JEREMY JACOBY | SPECIAL TO HART ENERGY

The scene on flowback locations is changing rapidly as gas flaring becomes an extinct practice. With new U.S. Environmental Protection Agency (EPA) regulations beginning to take effect and the deadline for compliance with Quad O regulations rapidly approaching, many operators are ahead of these regulations while others are just beginning the educational process to decipher these drastic new practices. Many will find this to be a seamlessly integrated and profitable new endeavor, and others will struggle to grasp an understanding of exactly what these new changes will entail.

New Quad O regulations

What is the purpose of Quad O? Technically, it is the standards of performance for crude oil and natural gas production, transmission and distribution. These regulations establish emission standards and compliance schedules for the control of volatile organic compounds and sulfur dioxide emissions from affected facilities that commence construction, modification or reconstruction after August 23, 2011.

Practically speaking, these regulations affect certain oil and natural gas well locations. In addition, these regulations impact equipment used at oil and gas facilities, such as centrifugal and reciprocating compressors, by limiting the amount of vapors that can be emitted into the atmosphere. Also included in the regulations are certain pneumatic controllers and storage vessels.

These new, stricter EPA regulations regarding vapor recovery are quickly approaching, and operators are scrambling to find solutions to capture or eliminate these vapors during flowback and everyday operations of their facilities. Two upcoming dates will trigger significant changes. As of October 15, the regulations will require storage tanks emitting more than 6 tons per year of volatile organic compounds to capture vapors. New regulations concerning the use of pneumatic controllers at wellheads also will be triggered. Regulations for "green completions" will be added to the required environmental compliance list concerning vapors emitted during flowback on January 1, 2015.



Environmentally Speaking | New regulations by the U.S. Environmental Protection Agency will adjust performance standards for crude oil and natural gas production, transmission and distribution in an effort to reduce harmful emissions.

Going green

Green completions take place during the cleanup stage of the completion after a well has been hydraulically fractured. The cleanup involves removing the water from the wellbore that was necessary to fracture the well. During this flowback, natural gas is produced with the water as it is extracted from the well.

What makes the well completion environmentally friendly is the gas being separated from the water and placed in a pipeline instead of being released to the atmosphere or flared like traditional flowback applications of the past. Green completion increases profits by using portable compression equipment to capture the gas and condensate while the recovered gas is directed to a pipeline and sold.

The use of compression for vapor recovery has been proven effective for many years. Compressco Partners LP entered the vapor recovery unit market with the GasJack compressor seven years ago. The design can provide flexibility from a compression ratio standpoint in addition to the large suction/discharge operating parameters that can be achieved.

During vapor recovery applications—particularly flow-back—maintaining the correct controls and configurations can be challenging since conditions are constantly changing. To address these problems, the company modified the controls of its 46-horsepower compressor to accommodate varying vapor volumes.

Vapor-volume instability often can occur during flowback because of fluctuations in fluid flow and early production incon-

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sistencies. The eight-cylinder integral engine/compressor can accommodate these fluctuations when combined with specialized controls and regulators.

How it works

Gas and flowback fluid are separated, with high-pressure gas going to sales and fluid dumped to a low-pressure separator (housed in the red building in the picture). The compressor unit is configured to pull high-Btu vapors from the low-pressure separator. The low-pressure separator then dumps liquid to the flowback fluid recovery tanks.

The pressure drop from the high-pressure vessels to the low-pressure separator creates additional flash gas, which is compressed back up to line pressure. The back-pressure valve is necessary to maintain enough pressure to operate all the control valves within the low-pressure separator and to dump the fluid to the recovery tanks.

Each location parameter varies, but this location used 35 psig as a starting point. The pressure may be raised or lowered during operation to optimize flash-gas production. Using the clean dry gas from the high-pressure separators can result in the unit running continuously and more consistently.

Field results

By working directly with operators and partnering with flowback companies such as Tetra Technologies Inc., Compressco Partners provides compression to manage the regulatory restrictions for vapor recovery while making it an extremely profitable process.

Marcellus and Utica flowback locations are becoming more profitable with these flaring alternatives. For example, a well operator in Washington County, Pennsylvania, uses dual GasJack compressors to recover vapors during flowback operations.

One compressor takes suction directly from the low-stage separator at approximately 30 psig and sends the nearly 1,800-Btu gas down the sales line to make the location more profitable. A second compressor, using specialized controls, maintains a steady 6 to 10 ounces of positive pressure on the storage tanks while using a blanket gas system to ensure reliability and consistent run time. This example is just one of many from a variety of applications where vapors can be recovered during flow-back operations.

In another example, some operators in the Utica shale have calculated a combination of savings and production uplift between \$80,000 and \$90,000 during flowback on a four-well pad.

By eliminating the need for two vapor destruction units at approximately \$8,000 per unit and then calculating the profit increase from the sale of vapors, the value in capturing those vapors to the bottom line is quickly realized. By converting approximately 13 million cubic feet of vapors during flowback from the four wells into the sales line and selling for more than \$6 per thousand cubic feet (due to the high-Btu gas), a “green completion” added more “green” to the bottom line.

Kinder Morgan, MarkWest Utica To Form Midstream JV

BUSINESS WIRE

Kinder Morgan Energy Partners LP and MarkWest Utica EMG LLC, a joint venture between MarkWest Energy Partners LP and The Energy and Minerals Group (EMG), signed a letter of intent to form a midstream joint venture (JV) to pursue two new projects to support producers in the Utica and Marcellus shales in Ohio, Pennsylvania and West Virginia.

The first project consists of the development of a 400 million cubic foot (MMcf) per-day cryogenic processing complex in Tuscarawas County, Ohio, utilizing an existing, 220-acre site that Kinder Morgan has under option.

The second project consists of the development of a C2+ natural gas liquids (NGL) pipeline with an initial capacity of 200,000 barrels (bbl.) per day that originates at the planned JV processing facilities in Ohio and transports NGLs to Gulf Coast fractionation facilities.

Key elements of the processing complex project include:

- MarkWest Utica EMG would anchor the JV's first planned 200-MMcf-per-day cryogenic processing plants to be constructed on Kinder Morgan's existing 220-acre site in Tuscarawas County by fourth-quarter 2014, with the second 200-MMcf-per-day plant in-service shortly thereafter. The existing site is expandable and could accommodate more than 1 billion cubic feet (Bcf) per day of processing capacity.
- MarkWest Utica EMG would deliver rich-gas volumes to the JV processing complex through an extension of its existing rich-gas gathering system in Harrison, Belmont, Guernsey, Noble and Monroe counties in Ohio. The JV processing

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complex would provide MarkWest Utica EMG's producer customers with additional residue outlets into the Tennessee Gas Pipeline Co. LLC (TGP) and Dominion Transmission pipeline systems;

- The JV processing complex would serve new customers in Carroll, Columbiana, Mahoning and Trumbull counties in northern Ohio and provide a critical full-service solution, which includes gas processing, NGL transportation and fractionation and residue gas outlets;
- To deliver the northern Utica gas to the processing complex, Kinder Morgan obtained regulatory approval to convert a portion of an existing 26-inch TGP pipeline into rich-gas gathering service, which could begin receiving rich-gas by fourth-quarter 2014;
- The JV would construct a new pipeline to deliver NGLs produced at the JV processing complex into MarkWest and MarkWest Utica EMG's extensive NGL gathering network for short-term and long-term fractionation at its Ohio and Pennsylvania fractionation and marketing complexes; and
- The JV would own the processing complex on a 50-50 basis and MarkWest Utica EMG would operate the facilities.

Key elements of the NGL pipeline project include:

- Kinder Morgan and MarkWest Utica EMG will develop a NGL pipeline project from the tailgate of the JV processing complex to Gulf Coast fractionation facilities through the conversion of more than 900 miles of Kinder Morgan's 24-inch and 26-inch TGP system currently in natural gas service from Tuscarawas County to Natchitoches, Louisiana, and the construction of approximately 200 miles of new NGL pipeline from Natchitoches to Mont Belvieu, Texas, and/or southern Louisiana. Kinder Morgan and MarkWest Utica EMG are evaluating constructing new fractionation facilities, as well as utilizing third-party fractionation facilities throughout the Gulf Coast;
- The proposed NGL pipeline would access MarkWest and MarkWest Utica EMG's NGL pipeline network that extends throughout the rich-gas areas of the Marcellus and southern Utica to deliver NGLs to the new NGL pipeline;
- By converting more than 900 miles of existing TGP assets and utilizing MarkWest and MarkWest Utica EMG's existing NGL network, the JV parties believe their NGL pipeline is best positioned to provide the most cost effective Y-grade outlet

from the Utica and Marcellus shale plays to the Gulf Coast area markets;

- The NGL pipeline would be expandable to 400,000 bbl. per day with the addition of pump stations;
- Subject to sufficient shipper commitments, permitting and all related regulatory approvals, a fourth-quarter 2015 in-service date for the NGL pipeline is anticipated; and
- Kinder Morgan would own at least 75% of the NGL pipeline and MarkWest Utica EMG would have the option to invest up to 25%. Kinder Morgan would operate the pipeline.

Natural Gas Advocate: CNG A 'Here And Now' Solution

BY **SUSAN KLANN** | HART ENERGY

Chesapeake is the second-largest U.S. natural gas producer (net) and, accordingly, has been active in natural gas transportation, infrastructure and vehicle market development, advocacy and education. "Compressed natural gas is the 'here and now' solution for 100% of consumers and fleets and every type of vehicle—on and off road," Dan Genovese, manager of market development for Chesapeake Energy Corp., said at the recent Western Energy Alliance annual meeting and conference in Snowmass, Colorado.

Global energy demand is on the march, driven in no small measure by the potential for China and India's growth in vehicle ownership per capita, according to the U.S. Energy Information Administration (EIA). China's current ownership is where U.S. car ownership stood in 1924. From 2009 to 2015, estimated energy use for China is expected to rise from 2.2 barrels (bbl.) per person to 10.1 bbl. per person; for India, the figure could rise from a current 0.9 bbl. per person to 5.4 bbl.

Genovese called the market potential for compressed natural gas (CNG) and liquefied natural gas (LNG) "dynamic," with the largest opportunity represented by light-duty vehicles at 42.4 billion cubic feet (Bcf) per day. The heavy-duty vehicle market is the most commercially ready and represents 10.8 Bcf per day, according to the EIA.

Natural gas is clean, safe, powerful and quiet, he said, and "CNG vehicles are coming." The governors of 22 states have a memorandum of understanding to use more CNG vehicles in their fleets; there is a Corporate Average Fuel Economy (CAFE) credit for CNG vehicles, and technology is under way to add smaller steel tanks to existing passenger vehicle platforms. These smaller tanks are easier

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Compression | In the coming years, the U.S. intends to utilize more vehicles that run on compressed natural gas.

to fit into existing vehicle platform designs, “dramatically” reducing costs for original equipment manufacturers, he said. Other innovations are under way, as well.

As for dual-fuel, gas/diesel technology, it is “game-changing,” he said. In terms of the high-horsepower market, Genovese said the opportunities for LNG use were “incredible”—for the mining, rail and marine industries.

Infrastructure development has been a stumbling block for CNG and LNG use, and Genovese recommended a “Goldilocks” strategy: “right-sized, smaller, more affordable, plug and play.” He advocated building onto existing retail locations in neighborhoods instead of in remote industrial parks. “Leverage the existing federal, state and local motor fuels inspection, excise tax collection and remittance model,” he said.

Until then, he encouraged the audience members to wait to replace their vehicles until a CNG model is available.

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Oil, Natural Gas Reserves See Record Growth

U.S. proved crude oil reserve additions in 2011 set a record volumetric increase for the second year in a row, increasing by 15% to 29 billion barrels (bbl.), according to a release by the U.S. Energy Information Administration (EIA). This marks the third consecutive annual increase and the highest volume of proved reserves since 1985. Proved reserves in tight oil plays accounted for 3.6 billion barrels, or 13% of the year’s total proved reserves of crude oil and lease condensate.

The EIA reported that Texas recorded the largest volumetric increase in proved oil reserves among individual states, with North Dakota closely following.

Natural gas proved reserves rose also, ranking as the second largest annual increase since 1977, but by less than 2010’s 10% increase to 348.8 trillion cubic feet (Tcf), the report said. Pennsylvania’s proved natural gas reserves, which more than doubled in 2010, rose an additional 90% in 2011, contributing 41% of the overall U.S. increase.

According to the EIA, Texas and Pennsylvania added a combined 73% of the net increase in U.S. proved wet natural gas reserves in 2011.

Crosstex Sees Second-Quarter Losses

Crosstex Energy LP realized an adjusted EBITDA of \$50.7 million and distributable cash flow of \$29.9 million for second-quarter 2013, compared with adjusted EBITDA of \$48.7 million and distributable cash flow of \$23.4 million for second-quarter 2012. The partnership’s net loss for the second-quarter 2013 was \$10.6 million, versus net loss of \$2.4 million during the same time period last year.

The partnership’s gross operating margin increased from \$90.3 million to \$95.5 million. According to the report, the improvement was due primarily to the partnership’s July 2012 acquisition of assets in the Ohio River Valley (ORV), greater contributions from its Permian basin assets and increased NGL fractionation and marketing activities.

The company’s rail, truck and barge operations in the ORV contributed \$13.5 million of gross operating margin during second-quarter 2013. Gross operating margins attributable to crude oil and condensate totaled \$8.5 million, and the remaining \$5 million of gross operating margin was attributable to brine handling and disposal.

Natural gas gathering, processing and transmission operations in the Barnett shale in north Texas and in the Permian basin in West Texas decreased gross operating margins by \$4.2 million. According to the report, increased gas processing margins, primarily in the Permian basin, were offset by a decline in gathering and transmission margins after decreased volumes and reduced gathering rates under certain contracts, including a contract with a major producer in north Texas.

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TransCanada Proceeds With \$1.5B North Montney Extension

TransCanada Corp.'s wholly owned subsidiary, NOVA Gas Transmission Ltd. (NGTL), signed agreements with Progress Energy Canada Ltd. for approximately 2 billion cubic feet (Bcf) per day of firm gas transportation services to underpin the development of a major pipeline extension of the NGTL System.

"The proposed North Montney Mainline project will provide substantial new capacity on the NGTL System in response to the rapidly increasing development of natural gas resources in northeastern British Columbia," Karl Johannson, executive vice president and president, natural gas pipelines, said in a company release.

The proposed North Montney Mainline will be a large diameter extension from the existing Groundbirch Mainline section of the NGTL system in northeast British Columbia (B.C.). It will consist of two sections, Aitken Creek and Kahta, totaling approximately 189 miles, and will include associated metering facilities, valve sites and possible compression facilities. The project will also include an interconnection with TransCanada's proposed Prince Rupert Gas Transmission (PRGT) project to provide natural gas supply to the proposed Pacific NorthWest LNG export facility near Prince Rupert, B.C.

Under the commercial arrangements with Progress, receipt volumes will ramp up between 2016 and 2019 to an aggregate volume of approximately 2 Bcf per day, and delivery volumes to the PRGT project will be approximately 2.1 Bcf per day beginning in 2019, according to the release. NGTL is also in discussions with other parties that have expressed interest in obtaining transportation services that would utilize the North Montney Mainline facilities. The total cost for the North Montney Mainline project is estimated to be approximately \$1.5 billion.

"The initial work for the project is proceeding well and we anticipate filing an application with the National Energy Board in the fourth-quarter 2013 for approvals to build and operate the facilities," Johannson said in the release. "If we receive the necessary approvals, we expect the Aitken Creek section to be operational in second-quarter 2016, the Kahta section in second-quarter 2017 and the export delivery facilities in 2019."



Pipeline Extension | TransCanada Corp.'s proposed expansion to its NGTL System would ramp up volumes to approximately 2 billion cubic feet per day. (Courtesy: TransCanada)

Blue Racer Midstream Takes Over Processing, Fractionation Plant

Dominion Resources transferred ownership of the Natrium natural gas processing and fractionation plant in Marshall County, West Virginia, to its \$1.5-billion joint venture company with Caiman Energy II LLC, Blue Racer Midstream LLC.

The large-scale plant currently has a cryogenic processing capacity of 200 million cubic feet (MMcf) per day, and Blue Racer is constructing a second 200-MMcf-per-day plant, to come online by first-quarter 2014.

Current fractionation capacity at Natrium is 36,000 barrels (bbl.) per day, which the company plans to increase to at least 59,000 bbl. per day.

NEWS & TRENDS | Up To Date

Inter Pipeline Expands Polaris Pipeline For Kearl Oil Sands Project

Inter Pipeline Fund will increase capacity on its Polaris Pipeline system in support of the phased development of the Kearl oil sands project operated by Imperial Oil Resources Ventures Ltd.

Under the terms of an existing 25-year ship-or-pay diluent transportation contract, Imperial holds an option to increase its firm capacity commitment on the Polaris Pipeline from 60,000 barrels (bbl.) per day to 120,000 bbl. per day. Inter Pipeline will install additional pumping capacity on the Polaris system.

Inter Pipeline will utilize its existing 12-inch Polaris diluent pipeline, which runs from the Edmonton, Alberta, area to the Kearl project north of Fort McMurray to supply additional diluent transportation capacity. Inter Pipeline will invest approximately \$45 million to expand mainline capacity through the recommissioning of three existing pump stations on the Polaris system, which were removed from service in 2011.

Upon completion, capacity on the Polaris pipeline will increase to approximately 165,000 bbl. per day to meet diluent demand from Imperial and other third-party shippers. The new pump station facilities are expected to be in service by mid-2015.

Inter Pipeline currently receives approximately \$37 million in annual EBITDA for diluent transportation services under the existing Polaris ship-or-pay agreement with Imperial. As a result of Imperial's higher capacity commitment, Inter Pipeline expects to receive incremental EBITDA of \$19 million per year once the new lines are in service.

Sabal Trail, FSC Selected For Natural Gas Pipeline System

Florida Power & Light Co. (FPL) selected Sabal Trail Transmission LLC—a joint venture between Spectra Energy Corp. and NextEra Energy Inc.—and NextEra's wholly owned subsidiary Florida Southeast Connection LLC (FSC) to build two natural gas pipelines and an interconnection hub. The company's economic analysis of the proposals for additional natural gas transportation capacity determined that these two projects will save FPL customers almost \$600 million compared with other proposals.

Sabal Trail will invest about roughly \$3 billion in the construction of a 465-mile interstate natural gas pipeline that will originate

in southwestern Alabama and transport natural gas to Georgia and Florida. It will terminate at a new Central Florida Hub south of Orlando, Florida, where it will interconnect with the two, existing natural gas pipelines that currently serve peninsular Florida. The pipeline will be capable of transporting more than 1 billion cubic feet per day of natural gas to serve local distribution companies, industrial users and natural gas-fired power generators in the Southeast.

FSC will invest approximately \$550 million to construct a separate pipeline from Sabal Trail's Central Florida Hub to FPL's Martin Clean Energy Center in Indiantown, Florida. The FSC project will initially be capable of transporting 400 million cubic feet per day.

Permitting is underway for both projects, and construction is expected to begin in 2016 in order for operations to commence in 2017.

Pembina To Construct \$110-Million Gas Plant

Pembina Pipeline Corp. plans to construct, own and operate a new 100 million cubic feet (MMcf) per day shallow cut-gas plant and associated natural gas liquids (NGL) and gas gathering pipelines near its existing Musreau facility, part of the company's Cut-bank complex in west central Alberta.

Musreau II, which is expected to cost approximately \$110 million, is underpinned by long-term contracts with area producers for 100% of the facility's capacity. The facility, expected to be in-service in first-quarter 2015, will be designed to extract propane-plus (C3+) and is expected to yield approximately 4,200 barrels per day of NGL for transportation on Pembina's Conventional Pipelines. The company expects that volumes from the Musreau II facility will further support its previously announced Conventional Pipeline expansions.

Pembina's gas services business has 368 MMcf per day of net shallow-cut processing capacity as well as 205 MMcf per day of deep-cut processing capacity currently in operation, with an additional 200 MMcf per day expected to be on stream during the third quarter, another 200 MMcf per day to be on stream in the third quarter of 2014 and a further 200 MMcf per day on stream in late 2015. With the addition of Musreau II, Pembina's gas processing capacity is expected to reach approximately 1.2 billion cubic feet per day by the end of 2015.

SNAPSHOT | Industry Insight

Oil, Gas Risk Management Key To Mitigating Cybersecurity Threats, Experts Say

BY NICOLE JOHNSON | HART ENERGY

The capabilities of the digital age can be a double-edged sword. The same technology used by the oil and natural gas industry to process and store financial data or remotely monitor and manage complex plant operations also presents the greatest vulnerabilities.

Among the most recent threats, hacker group “Anonymous” declared recently as a “call to arms for Operations Control”—setting its sights on the global energy industry.

In 2012, Saudi Aramco suffered a cybersecurity breach and in an effort to protect the company’s assets, “about 30,000 disk drives at Aramco had to be destroyed,” according to Neil Siegel, sector vice president and chief technology officer (CTO) at Northrop Grumman Corp.

From knowing what requires protection to identifying “channels of vulnerabilities” in company technology to facilitating a culture where employees are well-trained and accountable, the scope of cybersecurity is an “adaptive and proactive process,” Siegel told attendees at a monthly breakfast sponsored by Hart Energy.

A fellow speaker at the executive forum—Donald L. Paul, a former vice president and CTO at Chevron Corp.—said cybersecurity is not an information technology (IT) problem.

“Cybersecurity is a management problem,” said Paul, executive director of the Energy Institute at the University of Southern California.

“When I retired in ‘08 [from Chevron], we were averaging about 50,000 [cyber] attacks a day,” he added.

According to Paul, the nature of cyberattacks will continue to evolve, and while the oil and gas industries are better-armored than most, they also must evolve by effectively managing risk.

“The how is what most people think cybersecurity is all about, but I would argue that from a management point of view and from a company point of view managing the risks is at least as much about who, what are they trying to do, why are they doing it; because if you don’t assess the risks and the threats that way, you may be pouring resources into the wrong place,” he said.



Risk Management | Neil Siegel (left) and Donald L. Paul discussed cybersecurity concerns in the oil and natural gas industries at a recent executive breakfast sponsored by Hart Energy. (Photo: Joseph Markman, Hart Energy)

Although both the severity of the threat and effectiveness of cyberdefense are largely dependent on where either falls on the IT curve, risk management provides a “security framework” for productive strategizing. According to Siegel, a company’s IT department should not be left to determine what requires protection.

“The integrity of your financial information is clearly a management responsibility, but it’s also a potential for criminal activity,” Paul added.

The who and why: spotting threats

In order for oil and gas firms to focus resources on “low-probability but high-impact events,” both speakers explained the various types of cyberthreats.

According to Paul, the five main classifications of cyberthreats are:

- Mischievous hacking, which constitutes a large majority of attacks on major companies but is generally a lesser threat;
- Intended criminal adversaries, which seek market intelligence and financial information;
- Internal espionage, which includes all employees and is among the biggest sources of threats;
- Radical political groups, which can damage the company’s reputation and potentially become an obstacle when trying to obtain a permit, for example; and
- State-sponsored threats, which are well-funded, have strategic or geopolitical objectives and can be transnational entities.

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LEAD STORY | From The Front

Continued from
 Page 1

“This was not a decision made lightly, as it affects the economies of communities along the railway, employees of MMA and MMAC, as well as the shippers who depend on rail services. It would not be prudent, given the risks associated with rail operations, to permit MMA and MMAC to continue to operate without adequate insurance coverage.”

The disaster promoted MMAC and MMA to declare bankruptcy in early August.

“It has become apparent that the obligations of both companies now exceed the value of their assets, including prospective insurance recoveries, as a direct result of the tragic derailment at Lac-Mégantic, Québec, on July 6, and a process under Chapter 11 and the CCAA [Companies’ Creditors Arrangement Act] is the best way to ensure fairness of treatment to all in these tragic circumstances,” Edward Burkhardt, chairman of both companies, said in a public statement.

“MMA wishes to continue to work with the Québec Ministry of the Environment, the municipality of Lac-Mégantic and other government authorities in the continuing environmental remediation and clean-up as long as is necessary and will do everything within its capacity to achieve completion of such goal.

“The people of Lac-Mégantic have suffered a great deal over the last month. We are joined in sorrow, a sorrow that will remain a part of me for the rest of my life.”

MMA said it will continue to work with Québec’s Ministry of the Environment, the municipality of Lac-Mégantic, and other government authorities in the continuing environmental remediation and clean-up. Richter Advisory Group will act as the court-appointed monitor of the Canadian company.

Across the border, the deadly derailment prompted the U.S. Department of Transportation’s (DOT) Federal Railroad Administration (FRA) to issue an emergency order and safety advisory requiring railroads to undertake a series of measures within the next 30 days.

“Safety is our top priority,” U.S. Transportation Secretary Anthony Foxx said in a public release. “While we wait for the full



On The Air | Television crews flocked to Lac-Mégantic, Québec, in early July to gather news coverage of the disastrous train wreck that sent the crude-by-rail industry into a tailspin.

investigation to conclude, the Department is taking steps today to help prevent a similar incident from occurring in the U.S.”

The emergency order prohibits trains or vehicles carrying specified hazardous materials from being left unattended on a track or terminal without authorization. The order details several other steps employees, dispatchers and conductors must follow as well. Its requirements are focused on ensuring trains are secured, equipment is properly inspected and that information is recorded. The FRA said it will also hold an emergency Railroad Safety Advisory Committee meeting to discuss other possible safety measures.

Under existing DOT regulations, freight railroads are required to implement risk assessments and security plans in order to transport hazardous materials. Their plans must detail how to prevent unauthorized rail-yard access. In addition, railroads carrying hazardous material must follow security protocols and employees are subject to background checks and training.

The FRA says its “rigorous” safety program has helped reduce train accidents by 43% over the past decade and made 2012 the safest year in American rail history.

Contact Information:

FRANK NIETO Editor
fnieto@hartenergy.com

Contributing Editors: Richard Mason, Mike Madere, Scott Weeden, Amanda Hilow, Michelle Thompson, Nissa Darbonne, Leslie Haines, Peggy Williams, Susan Klann, Darren Barbee, Paul Hart, Emily Moser, Chris Sheehan, Steve Toon, Velda Addison, Kristie Sotolongo, Rhonda Duey

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