



April 25, 2014

Utica Shale Report

Analysis Of 4Q13 Ohio DNR Data

The Ohio Department of Natural Resources released data on 339 wells with production in 4Q13, up from 239 wells in 3Q13. There are several things to note about the data set. We are excluding wells that had no 4Q13 production or produced only water, along with four wells that were drilled into the Marcellus. Most wells in the Utica are somewhat constrained by infrastructure, which can make the data difficult to compare. In addition, not all the wells were on production for all of 4Q13, and some of the wells have already produced substantial hydrocarbons in prior periods, making their rates not comparable with newer wells. The gas volumes are reported as wet gas, so NGLs have yet to be stripped out. The inclusion of NGLs would lead to higher rates, especially on the gassier wells. Operators also use substantially different lateral lengths in the Utica, and this data is not adjusted.

Results

Exhibit 1: Operators With 10+ Utica Wells In 4Q13 Sample

Operator	# Of Wells	Average Days Online	Average Boepd	Oil %
AR	12	82	1,053	18%
CHK	210	66	345	19%
GPOR	38	61	866	26%
HES	13	34	542	27%
PDCE	11	53	415	56%
REXX	13	75	480	19%
Other	42	60	390	30%
Total	339	64	449	23%

Source: Ohio Department Of Natural Resources, RBC Capital Markets

- **Key Company Takeaways For 4Q13 Well Results:** GPOR's Utica wells continue to look very solid, as the company had six of the top 10 wells in terms of both overall 4Q13 production rate and overall oil rate. GPOR now has the second-most producing Utica wells, with an average 4Q13 rate around double the average for all 4Q13 industry wells. AR's longer-term production results also look very impressive with 12 wells averaging 1,053 Boepd during 4Q13, the highest rate of any operator with multiple wells. AR's Gary 2H well had the highest overall production rate in the sample (3,351 Boepd over 67 days, 1% oil). Of the other producers with 10+ wells online, we would say that HES, PDCE and REXX all have average results, although there may be infrastructure constraints coming into play here, and both PDCE and REXX have higher oil cuts and use shorter laterals.
- **Utica Activity Has Shifted To Gassier Areas.** As of late March 2014, there were 39 rigs running in the Utica, up from 35 rigs in 3Q13. CHK continues to be the most active operator with 8 rigs currently running, followed by GPOR and AR. We expect rig count growth to continue to accelerate in 2H14 as infrastructure constraints are relieved and operators increase development. We note that much of the recent growth has been in the gassier areas in Belmont and Monroe Counties.
- **Conclusion:** While oil cuts are slightly lower than initially advertised, the Ohio Utica continues to look like a very economic play, especially given the fact that many of these wells were constrained due to infrastructure issues. Production rates look quite strong over Belmont, Monroe, and Harrison Counties, while parts of Carroll, Noble, eastern Guernsey and northern Washington Counties also appear safely economic. We think this recent data provides further evidence that the productive condensate window will ultimately be a bit narrow, with much of the play being gas/NGLs.
- **Best Leverage:** The stocks we think have the best leverage to the Utica are GPOR, MHR, REXX and RICE.

Priced as of prior trading day's market close, EST (unless otherwise noted).

All values in USD unless otherwise noted.

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Results by Operator

CHK continues to have by far the most Utica wells online, but the majority of these are concentrated in Carroll County, away from the core area of focus for many other producers. GPOR now has the second-most wells online with 38, and these wells produced nearly double the average rate for all wells during 4Q13. AR's results continue to be very impressive, as the company had the largest average rate (1,053 Boepd) of any of the producers with significant scale. Of the other producers with 10+ wells online, we would say that HES, PDCE and REXX all have average results, although there may be infrastructure constraints coming into play here, and both PDCE and REXX have higher oil cuts and use shorter laterals.

Exhibit 2: 4Q13 Utica Results By Operator

Operator	# Of Wells	Average Days Online	Average Boepd	Oil %
APC	5	79	77	25%
AR	12	82	1,053	18%
ATLS	5	91	138	77%
BP	3	66	49	36%
Brammer Engineering	1	24	111	41%
CHK	210	66	345	19%
CNX	3	76	236	12%
CVX	2	49	304	51%
EQT	3	84	200	47%
EVEP	3	92	56	35%
GPOR	38	61	866	26%
Hall Drilling	1	13	1,628	0%
HES	13	34	542	27%
HG Energy	6	31	781	0%
Hilcorp	2	92	373	0%
HK	4	43	172	23%
MHR	1	9	58	100%
PDCE	11	53	415	56%
REXX	13	75	480	19%
STO	1	17	222	23%
XOM	1	21	2,199	0%
<u>Private Company</u>	<u>1</u>	<u>13</u>	<u>2,737</u>	<u>0%</u>
Total	339	64	449	23%

Source: Ohio Department Of Natural Resources, RBC Capital Markets; Note: Gas volumes are reported before processing, so there will be an NGL uplift not seen in this data.



Results By County

The counties with the strongest average production rates during 4Q13 were Belmont and Monroe, although these counties predictably had very low oil cuts. This continues to suggest that Belmont and Monroe will be the best dry gas counties. Of the counties with decent oil cuts, it appears that Guernsey and Harrison had the best results. Some of the farthest north and west counties like Mahoning, Muskingum, Portage, Stark, Trumbull and Tuscarawas continue to have disappointing results.

Exhibit 3: 4Q13 Utica Results By County

County	# Of Wells	Average Days Online	Average Boepd	Oil %
Belmont	17	37	1,508	1%
Carroll	179	66	344	17%
Columbiana	12	72	301	21%
Guernsey	24	53	384	52%
Harrison	54	71	409	41%
Jefferson	8	49	439	0%
Mahoning	2	54	228	11%
Monroe	15	49	1,284	2%
Muskingum	1	87	75	38%
Noble	12	85	392	23%
Portage	1	47	95	24%
Stark	2	89	52	28%
Trumbull	7	54	123	31%
Tuscarawas	2	65	55	26%
<u>Washington</u>	<u>3</u>	<u>52</u>	<u>283</u>	<u>53%</u>
Total	339	64	449	23%

Source: Ohio Department Of Natural Resources, RBC Capital Markets; Note: Gas volumes are reported before processing, so there will be an NGL uplift not seen in this data.



Notable Wells

The strongest wells in the 4Q13 data set included nearly exclusively dry gas wells in Monroe and Belmont Counties. The average production of the top 10 wells in terms of overall production was 2,122 Boepd, with the cutoff to make the top 10 at around 1,600 Boepd. GPOR has six of the top 10 wells.

Exhibit 4: Strongest 10 4Q13 Wells In Terms Of Total **Combined** Production

Well	Operator	County	4Q13 Days Online	4Q13 Boepd	4Q13 Oil %
Gary Unit 2H	AR	Monroe	67	3,351	1%
Irons 1-4H	GPOR	Belmont	27	2,835	0%
Tippens Unit 6HS	Private Company	Monroe	13	2,737	0%
Kaldor Unit 1H	XOM	Belmont	21	2,199	0%
Wagner 3-28H	GPOR	Harrison	78	1,798	6%
Family 2-32H	GPOR	Belmont	2	1,775	0%
Family 1-32H	GPOR	Belmont	3	1,655	0%
Mccort 1-28H	GPOR	Belmont	84	1,643	0%
Wolf Pen 3H	Hall Drilling	Monroe	13	1,628	0%
<u>Stutzman 1-14H</u>	GPOR	Belmont	<u>86</u>	<u>1,596</u>	<u>0%</u>
Total			39	2,122	1%

Source: Ohio Department Of Natural Resources, RBC Capital Markets; Note: Gas volumes are reported before processing, so there will be an NGL uplift not seen in this data.

Looking at only oil production, the top wells were exclusively located in Guernsey and Harrison Counties. Overall, the top 10 oil wells had an average production rate of 360 Bopd, with an average oil cut of 57%. However, these wells do not have nearly as much gas as wells in the less oily areas, with a total production rate of 650 Boepd. GPOR has six of the top 10 oil wells, and PDCE also has two solid oil wells in the set.

Exhibit 5: Strongest 10 4Q13 Wells In Terms Of Total **Oil** Production

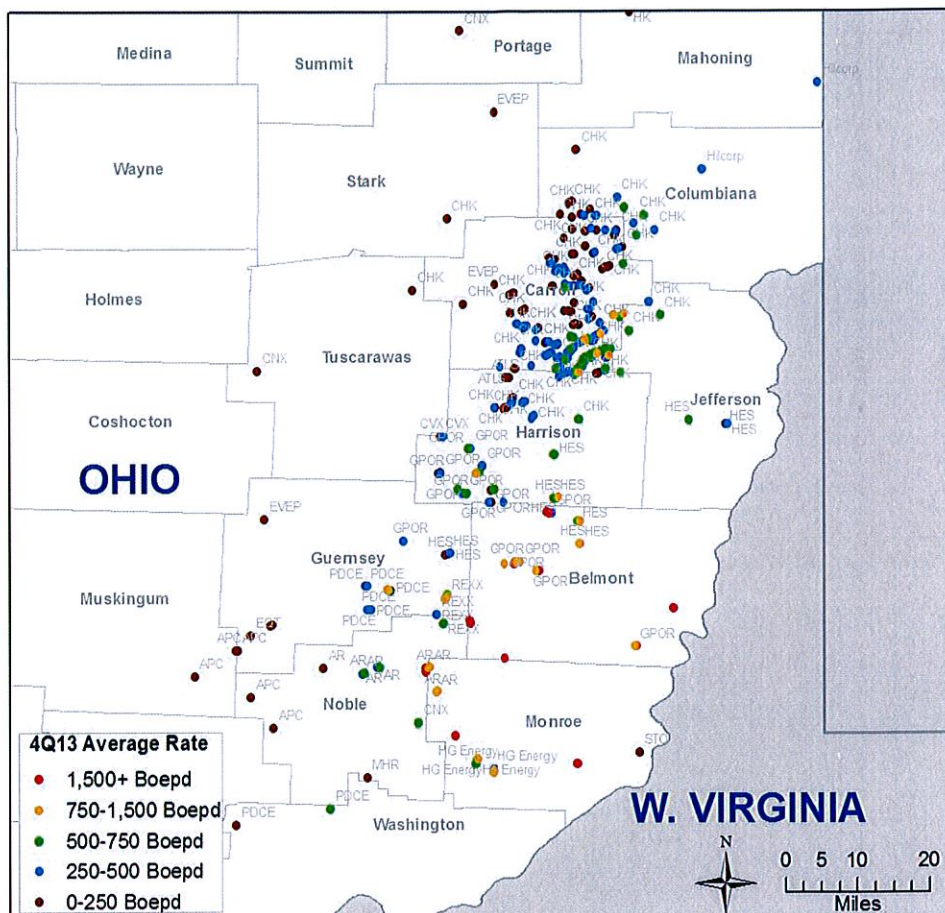
Well	Operator	County	4Q13 Days Online	4Q13 Bopd	4Q13 Boepd	4Q13 Oil %
Detweiler 3H	PDCE	Guernsey	26	466	809	58%
Ryser 3-25H	GPOR	Harrison	59	437	776	56%
CNXGUE 10N7W 4H-8	HES	Guernsey	3	415	415	100%
Detweiler 2H	PDCE	Guernsey	26	413	724	57%
Ryser 2-25H	GPOR	Harrison	52	351	671	52%
Ryser 4-25H	GPOR	Harrison	46	329	659	50%
Boy Scout Unit 2-33H	GPOR	Harrison	80	326	587	56%
Stephens B K 3-16H	GPOR	Harrison	55	294	696	42%
Kidd 21-12-6 3H	CHK	Harrison	42	285	483	59%
<u>Stephens B K 2-16H</u>	GPOR	Harrison	<u>57</u>	<u>284</u>	<u>677</u>	<u>42%</u>
Total			45	360	650	57%

Source: Ohio Department Of Natural Resources, RBC Capital Markets

Utica Map

The map showing Utica average production for 4Q13 continues to indicate that highest-rate areas in the play are the counties to the east, including the majority of Belmont and Monroe Counties, along with the eastern portions of Guernsey, Harrison and Noble Counties. This is consistent with the play having higher pressures to the east.

Exhibit 6: Average 4Q13 Production Rate



Source: Ohio Department Of Natural Resources, IHS, RBC Capital Markets



4Q13 Vs. 3Q13 Performance

There were 234 wells included in both the 3Q13 and 4Q13 data sets. On average, the wells declined by 29% sequentially and also saw a 4% decline in oil cut. We would note that the sequential decline looks consistent with other shale plays and is somewhat at odds with industry commentary around Utica wells having flat production for several months. This could be related to the large number of Carroll County wells in the sample, which generally have lower pressures. The decline in oil cut is consistent with the multi-phase reservoir behavior we expect to see in the Utica. Notably, the wells that were on in 3Q13 were not able to be online for anywhere near all of 4Q13, which is reflective of continued infrastructure issues in the Utica.

Exhibit 7: 4Q13 Vs. 3Q13 Well Data

	# Of Wells	Average Days Online	Average Boepd	Oil %
3Q13 Performance	234	66	497	25%
4Q13 Performance	234	<u>77</u>	<u>354</u>	<u>22%</u>
Decline			-29%	-4%

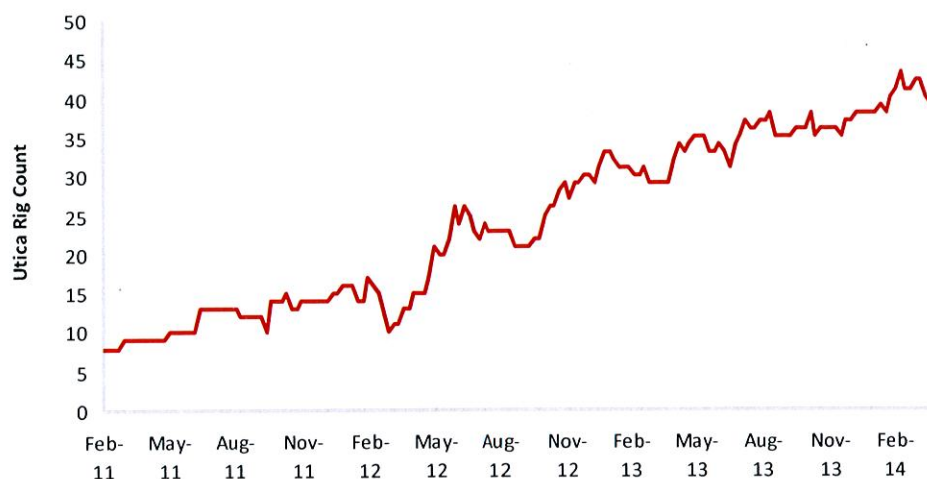
Source: Ohio Department Of Natural Resources, RBC Capital Markets; Note: Gas volumes are reported before processing, so there will be an NGL uplift not seen in this data.



Rig Activity

At the end of March 2014, there were 39 horizontal rigs running in the Utica, up from an average of 35 in 3Q13. The players with the highest activity levels in the play are CHK, GPOR and AR. The dry gas window continues to see a pick up in rig activity as Belmont and Monroe Counties both continue to see healthy increases in activity. We expect the rig count to continue to climb for the foreseeable future given the recent success in the play and our outlook for gas to stay steady between \$4.50-\$5.00/Mcf and solid NGL pricing. We think the rig count could increase by 50% by YE15.

Exhibit 8: Top Utica Rig Operators & Rig Count Over Time



Operator	
CHK	8
AR	5
GPOR	5
CNX	3
HES	3
CVX	1
EQT	1
MHR	1
PDCE	1
REXX	1
RICE	1
Other	9

County	
HARRISON	10
BELMONT	6
CARROLL	5
NOBLE	5
MONROE	3
COLUMBIANA	2
GUERNSEY	2
JEFFERSON	2
LAWRENCE	1
MERCER	1
MORGAN	1
WASHINGTON	1

Source: Company reports, IHS, Rig Data, RBC Capital Markets



Top Utica Leverage

We believe the names with the most exposure to the Utica Shale on a gross basis are CHK, EVEP, APC, GPOR, and AR. We think the names with the most leverage to the Utica, relative to their enterprise value, include EVEP, REXX, MHR, CHK and GPOR. We note that we are including acreage positions located not solely within the state of Ohio in our calculations.

Exhibit 9: Highlighted Exposure to Utica Play

UTICA SHALE			
Ticker	Acreage	Ticker	Acre / EV
CHK	1,000	EVEP	128.9
EVEP	335	REXX	51.4
APC	240	MHR	33.2
GPOR	165	CHK	30.9
AR	106	GPOR	28.8

Source: Company reports, RBC Capital Markets
Note: Acreage data includes non-Ohio Utica acreage

Utica Company Activity

We are including the acreage positions and both recent and planned activities of some of the major players in the Ohio Utica. Some of the companies referenced do not have data included in the 4Q13 Ohio DNR release.

Gulfport Energy (GPOR): Gulfport is currently running seven rigs on its 165,000 net acres in the Utica, which GPOR expects to keep flat for 2014. GPOR plans to drill 85-95 gross Utica wells in 2014 with a D&C CapEx budget of \$594-634 million. GPOR has publicly disclosed over 20 Utica results to date, with an average IP rate of over 2,300 Boepd (35% oil, 14% NGLs in ethane rejection mode).

Chesapeake Energy (CHK): Chesapeake is the largest leasehold owner in the Utica shale with approximately 1 million net acres. As of 1Q14, the company drilled more than 450 gross wells. Natural gas processing capacity is expected to increase from 400 MMcf/d now to 800 MMcf/d by YE14, which provides CHK room to grow production meaningfully. In 2014, CHK plans to average 7-9 operated rigs and we believe they are on track to reach the JV commitment to spud 540 cumulative wells by July 31, 2015. Most of CHK's drilling targets the wet gas window of the play inside its joint venture with Total. Within that area, CHK believes EURs range from 5-10 Bcfe.

Anadarko Petroleum (APC): Anadarko Petroleum has 240,000 net acres in the Utica shale and is currently flowing its pilot wells to determine the commercial viability before making further investments. APC had drilled and completed seven wells during 2012.

Devon Energy (DVN): Devon Energy has engaged an advisor to sell its 195,000 joint net acre Utica shale position, which was part of a multi-basin joint venture with Sinopec. Both parties are jointly marketing the assets. The acreage is mostly located in the western oil-prone part of the play. DVN operated a few far western wells that were not commercial producers. DVN has some acreage further east near the NGL/gas area, but the acreage is not sizeable enough to maintain a presence.

Magnum Hunter Resources (MHR): Magnum Hunter has roughly 99,000 net acres that it believes are prospective for the Utica Shale, which includes approximately 21,000 net acres



located just across the Ohio border in West Virginia. MHR holds roughly 58,000 net acres prospective for the liquids-rich Utica Shale primarily in Noble, Washington, and Monroe Counties, Ohio. MHR spud its first Utica well in Washington County in April 2013 (Farley 1H), but encountered issues while drilling the well and was only able to successfully stimulate 1/3 of the 6,500' lateral. MHR expects to test 2 additional Utica wells (Farley pad) in Washington County in the early summer. MHR also has approximately 20,000 net acres in the dry gas window of the Utica in Ohio. MHR's first dry gas Utica well (Stalder #3UH) tested at a peak rate of 32.5 MMcf/gpd and produced at just over 20 MMcf/gpd in early April, which was quite impressive. MHR has an 18-well pad planned around this successful well, which also includes Marcellus wells.

Rex Energy (REXX): REXX holds roughly 21,000 net acres in the Utica Shale concentrated in two distinct areas which the Company refers to as Warrior North (Carroll County) and Warrior South (Guernsey, Noble and Belmont Counties). After recently bringing its 3-well Ocel pad online in Warrior North, REXX has now placed 16 Utica wells into sales with an average 30-day sales rate of 1,177 Boepd in Warrior North and 1,721 Boepd in Warrior South. REXX is currently running 1 rig across both areas in 2014 and has 5 wells planned in Warrior North and 6 wells planned in Warrior South. In Warrior North, REXX expects to bring the 6-well Grunder pad online during 2Q14.

PDC Energy (PDCE): PDC Energy is currently running one rig on its 54,000 net acres in the Utica, but plans to add a 2nd rig in late 3Q14. PDCE currently has 18 gross Utica wells planned for 2014 with 8 on its northern acreage (Guernsey/Noble Counties) and 10 on its southern acreage (Washington/Morgan Counties). PDCE recently established a 1.2 MMboe EUR (10% oil, 44% NGL, 46% gas) type curve for its Utica acreage in the wet gas window based on results from its Garvin 1H well in Washington County. PDCE should provide more color on two more results from its southern acreage (Garvin 2H and 3H) at its upcoming 1Q14 Earnings call on May 6th. PDCE noted on April 17th that the Garvin 3H well (6,500' lateral) was producing over 1,000 Boepd on a 12/64" choke, which was ~40% better than the Garvin 1H well. PDCE also recently raised its condensate window EUR to 680 MBoe (up from 500-750 MBoe previously). Finally, PDCE recently executed a 6,000 net acre bolt-on acquisition in Washington County at a price of roughly \$4,000/net acre.

Rice Energy (RICE): Rice Energy has roughly 49,500 net acres in the Utica Shale, located almost entirely in the dry gas window in Belmont County. RICE recently reached TD on its first operated Utica well (Bigfoot 9H) with an initial result expected in the late May/early June timeframe. RICE plans to run one spudder rig and one horizontal rig in the Utica during 2014.

Carrizo Oil & Gas (CRZO): Carrizo has a 21,700 net acres predominately located in Guernsey, Noble, and Tuscarawas Counties, Ohio where there have been very solid results from industry to date. CRZO's only well to date (Rector 1H) is located in Guernsey County, Ohio and came on at a solid peak rate of 2,816 Boepd (60% condensate, 9% NGLs) and was producing was still producing 450 Bopd of condensate and 1.8 MMcfepd of gas (being flared) after 96 days on production. CRZO has stated that its next Utica well was slated to be spud in May 2014 and the Company intends to run a 1-rig drilling program in the Utica for the remainder of 2014.

EQT Corporation (EQT): EQT Corporation has 45,600 net acres total in the Utica shale, with around 13,600 core net acres in Ohio mostly concentrated in the southwestern portion of Guernsey County. The company drilled seven wells in 2013 that were not commercial viable. EQT announced it will defer plans to drill 21 new wells this year but will complete five



existing wells using a new frac design and re-evaluate those results before moving forward further.

EV Energy Partners (EVEP): Of the 103,800 acres that were marketed across the Utica, EVEP, along with certain EnerVest managed partnerships have now signed an agreement to divest a portion of its Utica Shale Acreage in Ohio. Through January 2014, proceeds in the amount of \$49.9MM have been closed on a portion of the assets. The remaining assets continue to be marketed in multiple packages by county. EVEP also continues to pursue an outright sale for its 20,000 non-operated acres. Out of the fifteen wells it permitted, EVEP has only released two results to date: the Frank 2H, in Stark County in the oil window, with an IP rate of 515 Boepd (40% crude, 40% NGLs) and the Cairns 5H, in Carroll county, with an IP rate of 1,683 Boepd (43% crude, 35% NGLs).



Companies mentioned

Anadarko Petroleum Corporation (NYSE: APC; \$99.50; Outperform)
 Carrizo Oil & Gas, Inc. (NASDAQ: CRZO; \$53.12; Outperform)
 Chesapeake Energy Corporation (NYSE: CHK; \$28.80; Sector Perform)
 Devon Energy Corporation (NYSE: DVN; \$70.40; Outperform)
 EQT Corporation (NYSE: EQT; \$105.25; Outperform)
 EV Energy Partners, L.P. (NASDAQ: EEP; \$36.52; Sector Perform)
 Gulfport Energy Corporation (NASDAQ: GPOR; \$71.79; Sector Perform)
 Hess Corporation (NYSE: HES; \$87.43;)
 Magnum Hunter Resources Corporation (NYSE: MHR; \$8.18; Outperform)
 PDC Energy Inc. (NASDAQ: PDCE; \$62.23; Outperform)
 Rex Energy Corporation (NASDAQ: REXX; \$20.86; Outperform)
 Rice Energy Inc. (NYSE: RICE; \$30.87; Sector Perform)

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