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A BRIEF HISTORY OF THE UTICA – POINT PLEASANT SHALE PLAY OF OHIO

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The Utica – Point Pleasant shale play, known simply as the "Utica" has a rich and interesting history that has unfolded over the past five years. The first Utica wells were drilled by Chesapeake Appalachia in Carroll and Harrison Counties in 2011. These wells proved significant natural gas, natural gas

liquids (NGL) and volatile oil production and with it, a new Ohio "oil boom" began. During the two years that followed; crude oil, volatile oil, natural gas liquids (NGLs) and dry gas production zones were delineated by approximately four hundred wells drilled by twenty different operators in seventeen different counties of eastern Ohio. These different production zones correspond to the thermal maturity of the Utica and correspond to the structural elevation of the underlying Trenton Limestone. Exploratory wells in the shallow westernmost crude oil portion of the play proved uneconomic while concentrated drilling in deeper areas to the east defined the early core of the play as the NGL producing or wet gas zone in Carroll, Columbiana and Harrison Counties. By the end of 2013 the Utica had produced one hundred and fourteen billion cubic feet gas and more than four million barrels of volatile oil. During this time the construction of gathering systems and transmission lines could not keep pace with drilling as the number of drilling rigs climbed and drilling efficiency continually improved.

A number of independent factors had a profound influence on the development of the Utica beginning in June 2014. The decline of crude oil prices had a lasting impact on unconventional drilling and production throughout the United States and the Utica. Rig count in the Utica peaked at fifty-five in December 2014 and declined to just seven rigs by June 2016. Insufficient takeaway and processing capacity of NGLs shifted the focus of drilling activity from the wet gas zone to the highly productive dry gas zone of Belmont and Monroe Counties. It is not uncommon for dry gas wells in Belmont and Monroe counties to produce more than eight billion cubic feet in the first two years of production. Such production is linked to long laterals, a greater number of frac stages, abnormal formation pressures and controlled production.

The Utica can be considered a mature shale play with strong upside potential in the coming years. Cumulative production through 2016 stands at nearly three trillion cubic feet of gas and fifty three million barrels of oil extracted from more than fifteen hundred wells. The anticipated completion of the Royal Dutch Shell ethane cracker in Monaca, PA along with the prospect of additional ethane crackers along the Ohio River will provide the needed ethane processing capacity to stimulate renewed production within the wet gas or NGL rich zone of Carroll, Harrison and Noble Counties as well as the wet gas zone of the Marcellus in Pennsylvania and West Virginia. The change of political climate in Washington D.C. in favor of domestic oil and gas development will stimulate drilling and production as pipeline construction increases takeaway capacity from Ohio and the Appalachian basin.