



BENESCH SHALE
MARKET INTELLIGENCE
QUARTERLY SUMMARY REPORT – Q4 2012

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1. Top Issues and Considerations

Top Issues	Considerations
<p>The U.S. natural gas boom has become a temporary victim of its own success, as the trillions of cubic feet of the fuel yet to be extracted is too cheap right now to encourage drilling. Production of oil and gas wells declined continuously through Q3. The total number of oil and gas rigs in the U.S. slid to 1,382 early in Dec., from more than 2,000 a year ago, according to data from Baker Hughes.</p>	<ul style="list-style-type: none"> • Companies and governments across the U.S. are starting to switch to CNG vehicles and fleets. An infrastructure is emerging – a CNG highway - to support the vehicles. • Drillers are placing higher focus on natural gas liquids, which are more profitable and are showing promising production results in the Utica. • The federal government is being pressured to ease natural gas export limitations.
<p>Lack of infrastructure - pipelines, midstream processing facilities, and storage facilities - held production in the Utica back in 2012. The lag caused fewer wells to be drilled than ODNR estimated; 165 wells were drilled compared to the estimate of 250 in 2012. About \$7B in processing infrastructure investment is planned in Ohio beginning in 2013.</p>	<ul style="list-style-type: none"> • Huge projects are planned, or already underway for 2013 and beyond. Drilling and midstream companies are investing billions of dollars into creating the infrastructure and the construction is boosting the local economy. • Qualified Ohio workers are in short supply and the companies are forced to bring some in from outside of state.
<p>Gulfport is reporting the best production numbers in the Utica, and has found the sweetest spots for drilling so far, in Belmont and Harrison counties. Chesapeake missed the mark by focusing on Carroll and Columbiana Counties.</p>	<ul style="list-style-type: none"> • Gulfport’s production could meet or surpass Cabot, which is the highest Marcellus producer, and will likely be more profitable due to the NGLs it is extracting. • Chesapeake, despite having the most leased acres in the Utica, admittedly missed the play’s sweet spot, and has sold some of its holdings in the play.
<p>Legal firm competitors continue to expand offices across Ohio.</p>	<ul style="list-style-type: none"> • The increased need—real and perceived—for legal services created by the shale boom is driving this expansion, though this rapid growth is likely to ebb as the play matures and firms establish lead positions of expertise in the industry and issues involved.

2. Shale Industry Moves

Production and extraction:

- **Largest Marcellus and Utica producers:** [Cabot Oil & Gas](#) produce more than 1 Bcf/d of natural gas - all from drilling in Pa.'s Susquehanna County. Two of Cabot's drilled wells sharing a single well pad produce over 66 Mmcf/d of natural gas compared to [Gulfport's record-breaking](#) Utica well, the Schugart 1-12H in Belmont, Oh., which produces 28.5 Mmcf/d. Gulfport will likely beat in profits as it also produces higher-priced NGLs.
- **[Gulfport made its first sale](#)** through MarkWest Energy's JV (with The Energy and Minerals Group). MarkWest went live with its interim 60 Mmcf/d Cadiz refrigeration plant in Harrison County, supported by production from Gulfport's Wagner 1-28H and Boy Scout 1-33H wells.
- **Gulfport** brought its [Utica lease holdings to 137,000](#) acres through a \$300 million acquisition from company Windsor Ohio.
- The **Utica play shrunk:** As Gulfport's numbers came in with a strong showing in Belmont and Harrison Counties, Carrizo Oil and CONSOL Energy said they [were moving south](#) out of Trumbull. BP stayed put, sticking with Trumbull. BP then [opened a hub in Youngstown](#) and keeps expanding its stake.
- **Emerging entrants** in the Utica play: [1st NRG](#) signed a letter of intent with a private third party to initiate development of about 7,150 acres in eastern Ohio. [Statoil](#) purchased 70,000 Utica shale acres in Ohio and W.V. for \$590 million. With a recent hostage situation in Africa, it will likely turn its focus to the U.S. **Halcon Resources** bought 50% of Carrizo's Utica stake including 19,000 acres across Trumbull and two Pa. counties for \$43 million.

General industry:

- **U.S. Geological Survey's first report** [estimates](#) the Utica shale formation holds about 38 trillion cubic feet of recoverable natural gas, 940 million BOE and 9 million barrels of NGLs like ethane and propane. The natural gas and oil is estimated to be worth about \$214 billion, liquids could be more.

3. Ohio Shale Infrastructure

Transportation and logistics

- **Railroad renewal:** The [Columbus & Ohio River Rail Road Company](#) signed a long-term agreement to ship NGLs from the Utica East Ohio Midstream NGL processing plant in Scio. **Allegheny Railroad** saw business grow by about 35% in the last three years after upgrading to increase capacity for all types of shale-related services. **Wheeling & Lake Erie Railroad's** Rook Yard saw traffic increase by 275% and is also undergoing upgrades to better serve MarkWest Energy Partners' gas processing facility. **Southwestern Pennsylvania Railroad** has started moving natural gas from its terminal in New Stanton
- **CNG vehicle and highway growth:** Clean Energy Fuels is building LNG fueling stations across a Natural Gas Highway to facilitate trucking companies converting to compressed natural gas engines. It has built 70 LNG filling stations near Pilot-Flying J truck stops and will build 70 to 80 more stations in 2013 near long-haul trucking routes and major warehouse distribution centers.
- Trucking giants Kenworth, Peterbilt are lined up to adopt a **new long-haul natural gas engine** debuting in 2013. Caterpillar and Westport will do so in the next five years.
- **Marathon Petroleum** announced its plan to build a [truck-to-barge loading facility in Wellsville](#), to transport hydrocarbon liquids oil from the Utica Shale to be refined in Catlettsburg, Ky.
- **S.H. Bell and U.S. Silica** inked deal to modify a facility in East Liverpool, Oh., to store silica frac sand.

Construction / Real Estate

- **Housing of all types is booming in Ohio** from shale play: In the Lisbon area, the Days Inn has seen an increase in occupancy and two motels that had been struggling are also benefiting from the drillers. The Frola Motel has freshened up its hotel rooms and paid its taxes. Rental prices are increasing. The Mayor of Carrollton says some newcomers are even buying property and plan to stay. Powell, Oh. was named the state's fastest-growing, nearly doubled its amount of housing units between 2000-2010 and posted a 96% population increase. The four growth communities runners-up: Pataskala, Canal Winchester, New Albany, and Pickerington.

3. Ohio Shale Infrastructure

Midstream

- **Cracker plant anticipation:** Royal Dutch Shell's cracker plant, although not confirmed, is [said to be still on track for Pa.](#)
- **Large deals:** Dominion Resources and Caiman Energy II (owned 48% by Williams Partners) announced a [\\$1.5B JV called Blue Racer Midstream](#), to provide pipelines and processing to natural gas producers in the Utica of Ohio and Pa. Williams will spend \$380M. Blue Racer Midstream may also ship NGLs out of Ohio on Williams' long haul pipeline in development.
- Complicated [three-way deal](#): Chesapeake sold shale assets to Access Midstream for \$2.16 billion, and [Access Midstream](#) sold a 50% share of shale assets to Williams for \$2.4 billion. It appeared to source *MDN* that the Chesapeake sale was actually to Williams through Access Midstream.
- **Gulfport and Markwest Energy**, after [going live](#) in Harrison, said they'll develop a **suite of midstream operations infrastructure** in Harrison, Guernsey, and Belmont counties, a 125 Mcf/d cryogenic processing plant, Cadiz I, and a 200 MMcf/d cryogenic plant, Cadiz II - both in 2013.
- M3 Midstream will open a **\$1B natural gas processing plant** – Ohio's first – in [Kensington \(Columbiana County\), in May 2013](#). M3 is partnering on the project with Chesapeake and EV Energy Partners.

3. Ohio Shale Infrastructure

Downstream

- **Piedmont Natural Gas**, utility which supplies customers in N.C., S.C., and Tenn., invested \$180 million in the Constitution Pipeline project. The pipeline will run from Susquehanna County, Pa. to Schoharie County, NY and will open in 2015. The other equity partners are Williams Partners, Cabot.
- **Dominion** inked deal to provide natural gas gathering services for M3 Gathering (JV of Chesapeake Midstream Dev and EV Energy Partners) Kensington plant under construction. Dominion will gather 180Mmc/d from M3's wells.
- **MarkWest** went live with its Sherwood I high pressure gas gathering facility in W.V. The Sherwood II processing facility will go live in Q2 2013. Future capacity could exceed 1 Bcf/d at the complex.
- **Construction of the ATEX Express ethane pipeline** is underway in Jefferson County – the 1,230 mile ethane pipeline will stretch from Houston, Pa. to the state of Indiana, and then on to the Texas Gulf Coast.

Supply Chain

- **Halliburton is investing \$35M-\$50M** in equipment and field service buildings at Zanesville's EastPointe Business Park over three years, will hire 300 and provide opportunities for local vendors, contractors, subcontractors.
- **The Wellsville Intermodal Park** in Oh. has benefited from the shale boom and expanded infrastructure for several new businesses which have moved in since June, including Anchor Drilling.
- **Valerus and Brilex Industries** created a partnership to make oil and gas handling equipment in Youngstown.
- Water treatment and recycling company **Tervita will be the vendor of choice for Chesapeake** and will build a water treatment plant in Carroll County.

3. Ohio Shale Infrastructure

Supply Chain (cont'd)

- A \$10M **Ohio warehouse office project** for the oil and gas industry has begun construction in Dennison at the intersection of state Route 800 and U.S. Route 250.
- **Caterpillar** and gas compressor manufacturer, **Ariel**, have formed a 50-50 joint venture, Black Horse, to provide well-service frac-pump products for oil and gas companies.
- **ENSERVCO** has signed five master service agreements to provide well-site services for major drilling companies working in Ohio's Utica play.
- **CONSOL Energy** expanded operations in the Columbiana County Port Authority's industrial park in Leetonia.
- Steelmaker **V&M Star** began production of its first tubular steel pipes to be used in oil and gas development from its \$350-million mill which will hire 350 employees.

4. Government

Regulatory

- In Ohio and across the U.S., policymakers debated how to use **taxes and fees** on oil and gas production to bolster state economies without "scaring away" energy development. Gov. John Kasich pushed to raise severance, taxes on high-volume drillers, and then share the wealth from the state's oil and gas boom through an income tax cut.
- **Ohio's AG provided guidance** to public authorities about entering into Road Use Maintenance Agreements (RUMAs) with oil and gas operators.
- The Pennsylvania state legislature: S.B 1346, moved to a house committee for consideration. It amends the Environmental Good Samaritan Act to **encourage the use of mine water for Marcellus shale natural gas well development**. S.B. 1616 proposed establishing a Marcellus Shale Health Advisory Panel including 12 members and the State Secretary of Health appointed by the Governor and legislature.
- **Oh. legislators** introduced multiple fracking and drilling-related bills prior to the end of the session: SB 318, SB 212 (requirements and royalties around drilling and operation of wells on state land), SB 213, HB 500 (related to collecting a fee to benefit local governments), HB 596 (revising the oil and gas permit application), HB 537, HB 493 (registration of landmen), and HB 528 (regarding monthly production statements for lessors).

Economic Development

- The Muskingum Watershed Conservancy District negotiated a drilling lease with Antero Resources for 7,600 acres of land at Seneca Lake. The district says it wants to lease its land for drilling but does not want drilling pads, wells and facilities on its land.
- **Midwest Energy Center** plans to purchase 50 acres from Carroll County Community Improvement Corporation to build a \$5-\$7-million electrical power generation plant to convert natural gas into electricity for sale to power companies.

4. Government

Economic Development (cont'd)

- **ESL Enviro**, a wastewater recycling company, proposed to build a plant on [Campbell property](#), which is unusable to the City, for 33 cents per gallon of wastewater.
- **Fairfield County Airport** negotiated with Enterprise Products to receive \$450,000 to allow part of the ATEX pipeline to travel under it. The county will also receive tax revenue from the pipeline.
- The **Airport Authority of Allegheny County** leased 9,000 acres to Consol Energy for \$2,250 per acre and a \$2-million deposit for 10% of the total amount.

Environment

- A federal [GAO report](#) was released which said the extent of **health and environment risks from shale drilling** are 'unknown.'
- **Halcon Resources** hired Front Runner Seismic, a firm based in Pa., to send 25 workers door to door seeking landowner [permissions for seismic testing](#) in Trumbull, Mahoning counties. Front Runner's team will stay in hotels and apartments in the Hubbard area for several months.
- **A Columbia Gas Transmission pipeline exploded in Sissonville, W.V.** The explosion caused no injuries but damaged properties. The NTSB found there was a 70% loss in wall thickness for a distance of about 6 feet in the pipe. After the accident, a former W.V DEP official commented that [landowners should track pipeline](#) locations as the governments in Ohio and W.V. do not map them and do not provide regulation of them beyond what impacts state-owned land.
- Chesapeake said it is developing 100% **'green' fracking** methods and fluids in shale wells.

6. Schools/Training

- **Marlington High School**, with the Ohio Department of Education, introduced a two-year program to train high school students on the oil and gas industry. The skills taught in the program are also transferable to other industries like construction, mechanical, building or farming.
- **Zane State College's** Oil and Gas Engineering Technology students are being **hired as compressor workers before even graduating**. Demand is high for well tenders, and mud loggers. The College may develop one-year training programs for oil field lease operators and compressor operators.
- Youngstown/Warren **Regional Chamber** will help local companies begin the **American Petroleum Institute's (API) Certification process** to become part of the oil and gas industry's supply chain. The Chamber is developing a three-day course which may run as early as March 2013, as a first step toward certification.
- **Trumbull County Educational Service Center** in Niles received \$50,000 from BP for a web-based STEM curriculum program. The program encourages students to solve real world problems in the fields of science, technology, engineering and math. Officials with **BP said this is the first of many possible donations** to the community.

6. Schools/Training (cont'd)

- Schlumberger has donated nearly \$18 million in software and equipment to the **W.V. University's** Department of Petroleum and Natural Gas Engineering since 2007.
- **Starting salaries** for petroleum engineers which average \$98,000 a year reflects the supply and demand for petroleum engineers, according to PayScale.com.
- Chesapeake Energy dropped its plan to drill a gas well near the **Wheeling Park High School** (W.V.), after receiving objections from various government departments over how close the drilling would be to the school via only three access roads.