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As filed with the Securities and Exchange Commission on July 30, 2013

Registration No. 333-189284

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**UNITED STATES SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

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**Amendment No. 1**  
to

**FORM S-1**  
**REGISTRATION STATEMENT**  
**UNDER**  
**THE SECURITIES ACT OF 1933**

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**ANTERO RESOURCES CORPORATION**

(Exact Name of Registrant as Specified in Its Charter)

<b>Delaware</b> (State or Other Jurisdiction of Incorporation or Organization)	<b>1311</b> (Primary Standard Industrial Classification Code Number)	<b>80-0162034</b> (IRS Employer Identification Number)
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**1625 17th Street**  
**Denver, Colorado 80202**  
**(303) 357-7310**

(Address, Including Zip Code, and Telephone Number,  
Including Area Code, of Registrant's Principal Executive Offices)

**Glen C. Warren, Jr.**  
**President, Chief Financial Officer and Secretary**  
**1625 17th Street**  
**Denver, Colorado 80202**  
**(303) 357-7310**

(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

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**(713) 546-5400**

**Approximate date of commencement of proposed sale of the securities to the public:**  
**As soon as practicable after the effective date of this Registration Statement.**

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

(Do not check if a  
smaller reporting company)

**The registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until this Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.**

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The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state or jurisdiction where the offer or sale is not permitted.

Subject to Completion, dated July 30, 2013

PROSPECTUS

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Shares



**Antero Resources Corporation**

Common Stock

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This is the initial public offering of the common stock of Antero Resources Corporation. We are offering \_\_\_\_\_ shares of our common stock. The selling stockholder has granted the underwriters the option to purchase up to an additional \_\_\_\_\_ shares of common stock on the same terms and conditions if the underwriters sell more than \_\_\_\_\_ shares of common stock in this offering. We will not receive any proceeds from the sale of shares held by the selling stockholder. No public market currently exists for our common stock.

We have applied to list our common stock on the New York Stock Exchange under the symbol "AR".

We anticipate that the initial public offering price will be between \$ \_\_\_\_\_ and \$ \_\_\_\_\_ per share.

*Investing in our common stock involves risk. See "Risk Factors" beginning on page 22 of this prospectus.*

	Per share	Total
Price to the public	\$ _____	\$ _____
Underwriting discounts and commissions payable by us	\$ _____	\$ _____
Proceeds to us (before expenses)	\$ _____	\$ _____

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Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The underwriters expect to deliver the shares of common stock to purchasers on or about \_\_\_\_\_, 2013.

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**Barclays**

**Citigroup**

**J.P. Morgan**

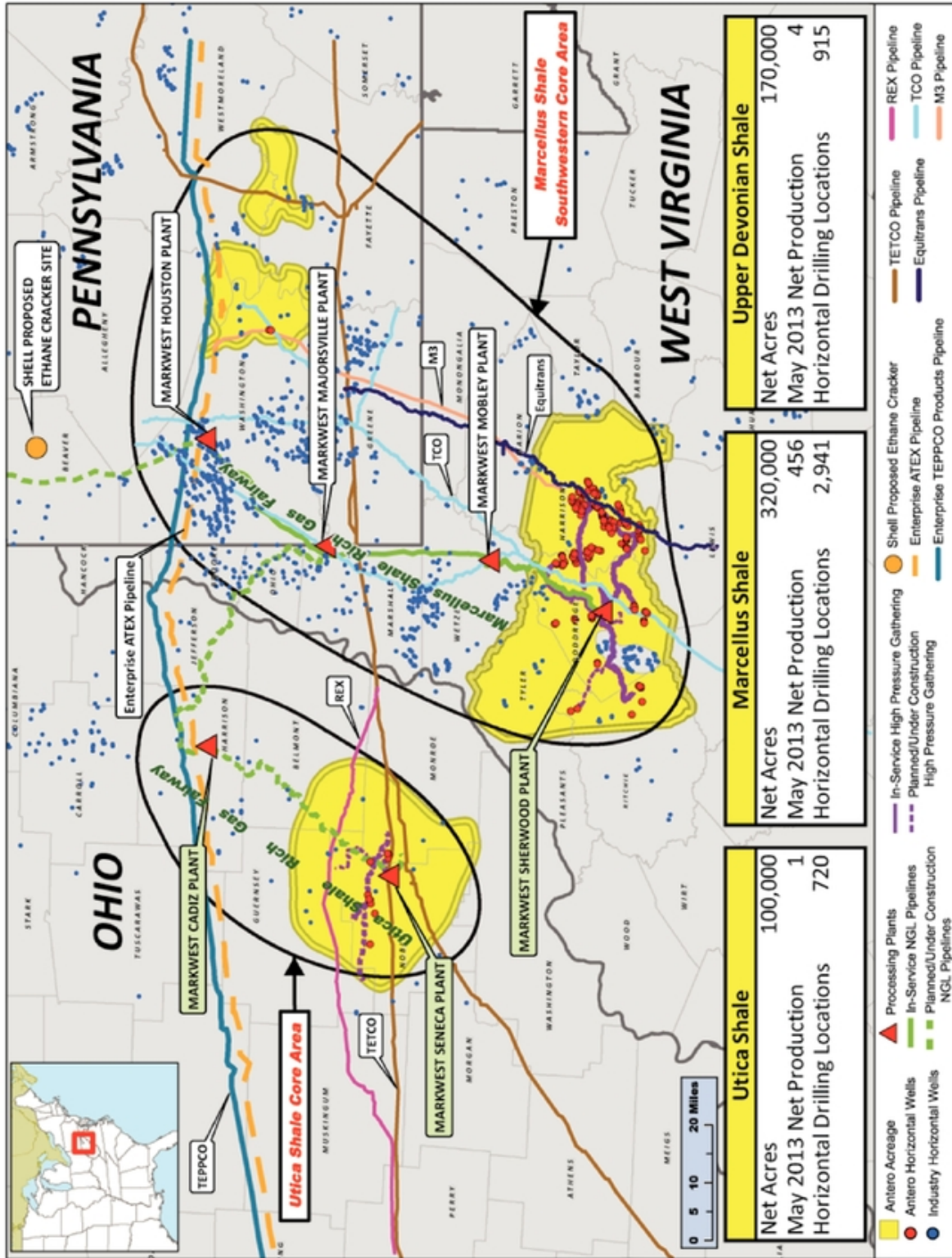
**Credit Suisse**

**Jefferies**

**Wells Fargo Securities**

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You should rely only on the information contained in this prospectus and any free writing prospectus prepared by us or on behalf of us or to which we have referred you. Neither we nor the selling stockholder has authorized anyone to provide you with information different from that contained in this prospectus and any free writing prospectus. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We and the selling stockholder are offering to sell shares of common stock and seeking offers to buy shares of common stock only in jurisdictions where offers and sales are permitted. The information in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or any sale of the common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

This prospectus contains forward-looking statements that are subject to a number of risks and uncertainties, many of which are beyond our control. See "Risk Factors" and "Cautionary Statement Regarding Forward-Looking Statements."

### **Industry and Market Data**

The market data and certain other statistical information used throughout this prospectus are based on independent industry publications, government publications and other published independent sources. Some data is also based on our good faith estimates. Although we believe these third-party sources are reliable as of their respective dates, neither we nor the underwriters have independently verified the accuracy or completeness of this information. The industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of factors, including those described in the section entitled "Risk Factors." These and other factors could cause results to differ materially from those expressed in these publications.

## PROSPECTUS SUMMARY

*This summary highlights some of the information contained in this prospectus and does not contain all of the information that may be important to you. You should read this entire prospectus and the documents to which we refer you before making an investment decision. You should carefully consider the information set forth under "Risk Factors," "Cautionary Statement Regarding Forward-Looking Statements" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the historical consolidated financial statements and the related notes to those financial statements included elsewhere in this prospectus. Where applicable, we have assumed an initial public offering price of \$ per share (the midpoint of the price range set forth on the cover page of this prospectus). Unless otherwise indicated, the information presented in this prospectus assumes that the underwriters' option to purchase additional shares of common stock from the selling stockholder is not exercised. Unless otherwise indicated, the estimated reserve volumes presented in this prospectus are based on SEC pricing at June 30, 2013 (assuming ethane rejection), as described in "—Our Properties—Reserves." Certain operational terms used in this prospectus are defined in the "Glossary of Natural Gas and Oil Terms."*

*In this prospectus, references to "we," "us," "our" and the "Company" refer to Antero Resources LLC and its subsidiaries before the completion of our corporate reorganization and to Antero Resources Corporation and its subsidiaries as of and following the completion of our corporate reorganization. Please see "Corporate Reorganization." References to the "selling stockholder" refer to Antero Resources Investment LLC.*

### **Our Company**

We are an independent natural gas and oil company engaged in the exploitation, development and acquisition of natural gas, NGLs and oil properties located in the Appalachian Basin in West Virginia, Ohio and Pennsylvania. We are focused on creating shareholder value through the development of our large portfolio of repeatable, low cost, liquids-rich drilling opportunities in two of the premier North American shale plays. We currently hold approximately 320,000 net acres in the southwestern core of the Marcellus Shale and approximately 100,000 net acres in the core of the Utica Shale. In addition, we estimate that approximately 170,000 net acres of our Marcellus Shale leasehold are prospective for the slightly shallower Upper Devonian Shale. As of June 30, 2013, our estimated proved, probable and possible reserves were 6.3 Tcfe, 14.0 Tcfe and 7.4 Tcfe, respectively, and our proved reserves were 23% proved developed and 91% natural gas. As of June 30, 2013, our drilling inventory consisted of 4,576 identified potential horizontal well locations, approximately 82% of which are liquids-rich drilling opportunities.

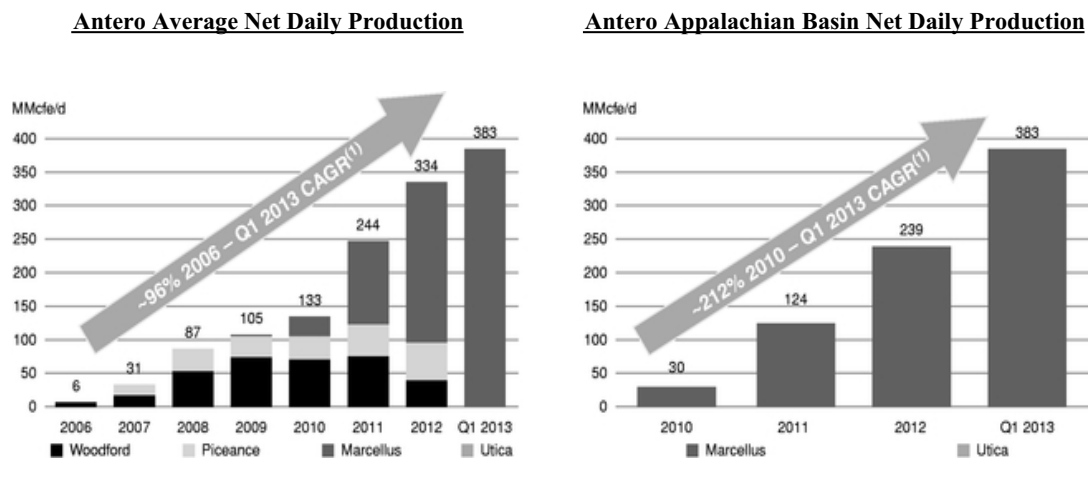
Our management team has a proven track record of implementing geologically driven growth strategies in some of the most prominent unconventional play types across the United States, including the Barnett, Woodford, Marcellus and Utica Shales. Paul Rady, our Chairman and Chief Executive Officer, and Glen Warren, our President and Chief Financial Officer, founded our business in 2002. The majority of our management team has worked together at various times for over 30 years at Amoco Production Company, Barrett Resources Corporation, Pennaco Energy Inc. and Antero Resources. Our management team has created significant shareholder value through various past ventures, including the sale of two unconventional resource-focused upstream companies and one midstream company in the last 15 years.

We have been successful in targeting large, repeatable resource plays where horizontal drilling and advanced fracture stimulation technologies provide the means to economically develop and produce natural gas, NGLs and oil from unconventional formations. We have been early adopters of innovative hydraulic fracturing and completion techniques, having drilled over 400 horizontal wells in the Barnett, Woodford, Marcellus and Utica Shales. As a result of our horizontal drilling and completion expertise, and the predictable geologic structure throughout our largely contiguous land position in the

southwestern core of the Marcellus Shale, we have drilled approximately 1.3 million lateral feet without encountering any faulting in our target zone. We have drilled and completed 170 horizontal wells in the Marcellus Shale with a 100% success rate to date. We define the term 100% success rate to mean that all wells were completed and produce in commercially viable quantities. With 15 rigs running, we are currently the most active driller in the Marcellus Shale based on information from RigData. We have begun to apply the expertise and approach we employ in the Marcellus Shale to the Utica Shale, and we believe we will be able to achieve similar success. We have drilled and completed eight horizontal wells in the Utica Shale with a 100% success rate without encountering any faulting.

Our net daily production in the first quarter of 2013 averaged 383 MMcfe/d, including 2,392 Bbls/d of NGLs and oil. Further, our estimated average net daily production for the month of May 2013 was 461 MMcfe/d, including 4,114 Bbls/d of NGLs and oil. We grew proved reserves at a compounded annual growth rate of 96% from 2006 to 2012, despite the 2012 divestiture of our Arkoma and Piceance Basin properties. Additionally, from January 1, 2012 to June 30, 2013, we increased our Appalachian proved reserves by 47% to 6.3 Tcfe, assuming ethane rejection at each date.

The charts below illustrate the growth in our average net daily production on an overall basis since 2006 and in the Appalachian Basin since 2010:



(1) CAGR means compounded annual growth rate.

Our 2013 capital budget is \$1.95 billion, including \$1.20 billion for drilling and completion, substantially all of which is allocated to our operated drilling in liquids-rich gas areas. As of March 31, 2013, we had spent approximately \$548 million of our 2013 capital budget.

**Our Properties**

**Marcellus Shale**

We believe the Marcellus Shale is a premier North American shale play due to its high well recoveries relative to drilling and completion costs, broad aerial extent, relatively homogeneous high-quality reservoir characteristics and significant hydrocarbon resources in place. Based on these attributes, as well as drilling results publicly released by other operators, we believe that the Marcellus Shale offers some of the most attractive single-well rates of return of all North American conventional and unconventional play types. We also believe that the Marcellus Shale has two core areas: the southwestern core in northern West Virginia and southwestern Pennsylvania and the northeastern core in northeastern Pennsylvania. According to RigData, approximately 90% of the 89 drilling rigs currently operating in the Marcellus Shale are located in these two core areas.



All of our approximately 320,000 net acres in the Marcellus Shale are located within the southwestern core. We have experienced virtually no geologic complexity in our drilling activities to date, which has contributed to what we believe to be a narrow and predictable band of expected well recoveries per 1,000 feet of lateral length on our wells. Further, the lower thermal maturity of the Marcellus Shale in the western half of the southwestern core yields liquids-rich natural gas and condensate, which allows for NGL processing that can significantly improve well economics. As of June 30, 2013, we had approximately 2,941 identified gross undrilled horizontal well locations in the Marcellus Shale.

For the three months ended March 31, 2013, we had average net daily production of 382 MMcfe/d in the Marcellus Shale. Further, our estimated average net daily production for the month of May 2013 was 461 MMcfe/d, including 4,114 Bbls/d of NGLs and oil. We currently have 15 rigs operating in the Marcellus Shale and expect to drill 135 wells in 2013, of which 51 had been drilled as of May 31, 2013. We believe our full cycle drilling, completion and operating costs on a per unit basis are among the lowest in the Marcellus Shale and the industry as a whole.

### ***Utica Shale***

Based on initial drilling results, we believe the Utica Shale is a premier North American shale play. We believe that the core area is located in the southern portion of the play, which has been defined by significant drilling activity by several operators. We own approximately 100,000 net acres in the core of the Utica Shale and expect to add to our sizeable land position. The proximity of our Utica acreage position to our operations in the Marcellus Shale allows us to capitalize on operating and midstream synergies. We are currently operating two drilling rigs in the Utica Shale and have completed eight horizontal wells with strong results. We have had a 100% success rate and believe over 90% of our acreage has liquids-rich gas processing potential. We expect to drill 21 wells in the Utica Shale in 2013, of which six had been drilled as of May 31, 2013. As of June 30, 2013, we had approximately 720 identified gross undrilled horizontal well locations in the Utica Shale.

### ***Reserves***

The following tables provide summaries of our estimated reserves as of June 30, 2013, assuming ethane "recovery" and ethane "rejection." Ethane rejection occurs when ethane is left in the wellhead gas stream when the gas is processed, rather than being separated out and sold as a liquid after fractionation. When ethane is left in the gas stream, the BTU content of the residue gas at the outlet of the processing plant is higher. Producers will elect to "reject" ethane when the price received for the higher BTU residue gas is greater than the price received for the ethane being sold as a liquid after fractionation. When ethane is recovered, the BTU content of the residue gas is lower, but a producer is then able to recover the value of the ethane sold as a separate NGL product. In addition, gas processing plants can produce the other NGL products (propane, normal butane, isobutane and natural gasoline) while rejecting ethane. The combination of infrastructure constraints in the Appalachian region and low ethane prices has resulted in many producers "rejecting" rather than "recovering" ethane. Although our reserve data as of December 31, 2012 assumed ethane recovery based on the reserve pricing methods required by the SEC, or SEC pricing, the current spot price environment has shifted to one that favors ethane rejection and therefore our reserve estimates as of June 30, 2013 assumed ethane rejection.

**SEC Pricing**

	Estimated Net Reserves (Bcfe)(1)	
	Ethane Recovery	Ethane Rejection
<b>Proved Reserves(2):</b>		
Marcellus Shale	6,689	5,959
Upper Devonian Shale	44	44
Utica Shale	341	279
Total Proved Reserves	7,074	6,282
<i>% Developed</i>	22%	23%
<i>% Liquids</i>	23%	9%
<b>Probable Reserves(2):</b>		
Marcellus Shale	14,135	11,796
Upper Devonian Shale	665	661
Utica Shale	1,958	1,582
Total Probable Reserves	16,758	14,039
<i>% Liquids</i>	38%	19%
<b>Possible Reserves(2):</b>		
Marcellus Shale	989	959
Upper Devonian Shale	3,461	3,076
Utica Shale	3,843	3,393
Total Possible Reserves	8,293	7,428
<i>% Liquids</i>	23%	10%
PV-10 of Proved Reserves (in millions)(2)(3)	\$ 4,243	\$ 4,468
PV-10 of Probable Reserves (in millions)(2)(3)	\$ 8,223	\$ 8,868
PV-10 of Possible Reserves (in millions)(2)(3)	\$ 2,210	\$ 2,413

- (1) Volumes and values were determined under SEC pricing using index prices for natural gas and oil of \$3.43 per MMBtu and \$81.65 per Bbl. These prices were then adjusted for gathering, processing, compression and other costs. For the adjusted realized prices under SEC pricing, see "Business—Our Operations—Reserve Data—Adjusted Index Prices Used in Reserve Calculations."
- (2) Our estimated proved, probable and possible reserves and PV-10 as of June 30, 2013 using SEC pricing are based on evaluations prepared by our internal reserve engineers, which have been audited by our independent reserve engineers, DeGolyer and MacNaughton.
- (3) PV-10 was prepared using SEC pricing discounted at 10% per annum, without giving effect to taxes or hedges. PV-10 is a non-GAAP financial measure. We believe that the presentation of PV-10 is relevant and useful to our investors as supplemental disclosure to the standardized measure of future net cash flows, or after tax amount, because it presents the discounted future net cash flows attributable to our reserves prior to taking into account future corporate income taxes and our current tax structure. While the standardized measure is dependent on the unique tax situation of each company, PV-10 is based on a pricing methodology and discount factors that are consistent for all companies. Because of this, PV-10 can be used within the industry and by creditors and securities analysts to evaluate estimated net cash flows from proved reserves on a more comparable basis. Investors should be cautioned that neither PV-10 nor standardized measure represents an estimate of the fair market value of our proved reserves. GAAP does not prescribe any corresponding measure for PV-10 of probable reserves and possible reserves or

reserves based on other than SEC prices. As a result, it is not practicable for us to reconcile these additional PV-10 measures to GAAP standardized measure. For a reconciliation of PV-10 of proved reserves based on SEC pricing to standardized measure, see "—Summary Reserve, Production and Operating Data—Summary Reserve Data."

**Strip Pricing Sensitivity Case**

	June 30, 2013	
	Estimated Net Reserves (Bcfe)(1)	
	Ethane Recovery	Ethane Rejection
<b>Sensitivity of Estimated Proved Reserves Based on Strip Pricing(2):</b>		
Total equivalent proved reserves	7,087	6,295
Total equivalent proved developed reserves	1,594	1,448
Percent proved developed	22%	23%
PV-10 of proved reserves (in millions)(2)(3)	\$ 5,279	\$ 5,644
<b>Sensitivity of Estimated Probable Reserves Based on Strip Pricing(2):</b>		
Total equivalent probable reserves	16,776	14,057
PV-10 of probable reserves (in millions)(2)(3)	\$ 9,173	\$ 10,210
<b>Sensitivity of Estimated Possible Reserves Based on Strip Pricing(2):</b>		
Total equivalent possible reserves	8,310	7,444
PV-10 of possible reserves (in millions)(2)(3)	\$ 2,939	\$ 3,245

- (1) Volumes and values were determined under strip pricing using index prices for natural gas and oil of \$3.86 per MMBtu and \$77.04 per Bbl. These prices were then adjusted for gathering, processing, compression and other costs. For the adjusted realized prices under strip pricing, see "Business—Our Operations—Reserve Data—Adjusted Index Prices Used in Reserve Calculations."
- (2) Our estimated proved, probable and possible reserves and PV-10 as of June 30, 2013 based on strip pricing as of June 30, 2013 have been prepared by our internal reserve engineers, which have been audited by our independent reserve engineers, DeGolyer and MacNaughton.
- (3) PV-10 was prepared using strip pricing, discounted at 10% per annum, without giving effect to taxes or hedges. PV-10 is a non-GAAP financial measure. We believe that the presentation of PV-10 is relevant and useful to our investors because it presents the discounted future net cash flows attributable to our reserves prior to taking into account future corporate income taxes and our current tax structure. PV-10 is based on a pricing methodology and discount factors that are consistent for all companies. Because of this, PV-10 can be used within the industry and by creditors and securities analysts to evaluate estimated net cash flows from proved reserves on a more comparable basis. Investors should be cautioned that PV-10 does not represent an estimate of the fair market value of our reserves. GAAP does not prescribe any corresponding measure for PV-10 of reserves based on other than SEC prices. As a result, it is not practicable for us to reconcile these additional PV-10 measures to GAAP standardized measure.

For more information about our reserves, including the reserves attributable to individual natural gas product types and the prices used in calculating volumes and values under each pricing scenario, see "Business—Our Operations—Reserve Data."

**Operating Data**

The following table provides a summary of our net acreage and identified potential well locations as of June 30, 2013, our 2013 projected drilling schedule based on gross wells, and our average net daily production for the three months ended March 31, 2013:

	As of June 30, 2013					2013 Projected Drilling Schedule (Gross Wells)	Average Net Daily Production (MMcfe/d)
	Net Acres(1)	Identified Potential Well Locations(2)			Total		
		Proved Undeveloped	Probable	Possible			
Marcellus Shale:							
Highly Rich(3)	103,000	923	42	848	33	27	1
Rich(3)	155,000	1,430	584	789	57	108	358
Dry(3)	62,000	588	61	396	131	—	19
Utica Shale	100,000	720	17	175	528	21	1
Upper Devonian Shale	170,000	915	7	149	759	—	4
<b>Total</b>		<b>4,576</b>	<b>711</b>	<b>2,357</b>	<b>1,508</b>	<b>156</b>	<b>383</b>

- (1) Net acres prospective for the Upper Devonian Shale are also included among the Marcellus Shale net acres. The Upper Devonian Shale and the Marcellus Shale are stacked formations within the same geographic footprint.
- (2) Our proved undeveloped, probable and possible identified potential well locations are based on specifically engineered locations to which the applicable category of reserves were attributable based on SEC pricing as of June 30, 2013. For a description of how we determine our identified potential well locations, see "Business—Our Operations—Reserve Data—Identification of Potential Well Locations."
- (3) Classifications are based on our and other operators' drilling results in the Marcellus Shale and are subject to confirmation through actual future drilling results. For definitions of "highly rich gas," "rich gas" and "dry gas," see the "Glossary of Natural Gas and Oil Terms" in Annex A to this prospectus.

**Midstream Infrastructure**

We maintain a strong commitment to developing the necessary midstream infrastructure to support our drilling schedule and production growth. We accomplish this goal through a combination of internal asset developments and contractual relationships with third-party midstream service providers. As part of our internal developments, we have invested a significant amount of capital in building low- and high-pressure gathering lines, compression facilities and water pipeline systems. As of March 31, 2013, we owned and operated 75 miles of gathering pipelines and had contracted access to an additional 94 miles of gathering pipelines. We also own and operate four compressor stations and had firm access to nine additional third-party compressor stations in the Appalachian Basin. We have additional gathering pipelines and compressor stations under construction to support our planned drilling activities. In the past we have monetized certain midstream infrastructure assets for a significant return on investment and redeployed the proceeds into our ongoing operations.

Through third-party contractual relationships, we have obtained committed cryogenic processing capacity for our Marcellus and Utica Shale production. For example, we have contracted with MarkWest Energy Partners, L.P., or MarkWest, to provide processing capacity as follows:

	Plant Processing Capacity (MMcf/d)	Contracted Firm Processing Capacity (MMcf/d)(1)	Anticipated Date of Completion
<b>Marcellus Shale:</b>			
Sherwood I	200	200	In service
Sherwood II	200	200	In service
Sherwood III	200	150	Fourth Quarter 2013
Sherwood IV	200	200	Second Quarter 2014
Marcellus Shale Total	800	750	
<b>Utica Shale:</b>			
Cadiz(2)	185	—	In service
Seneca I(3)	200	150	Fourth Quarter 2013
Seneca II(3)	200	—	Fourth Quarter 2013
Seneca III(4)	200	100	First Quarter 2014
Utica Shale Total	785	250	

- (1) Contracted firm capacity at the Sherwood and Seneca facilities as of the start-up date of each identified unit.
- (2) Firm interim capacity of 80 MMcf/d at Cadiz will be fixed at 50 MMcf/d capacity upon start-up of the Seneca I processing complex and will terminate upon start-up of the Seneca II processing complex.
- (3) We have an option on Seneca I firm capacity that, if exercised by a certain date, would result in an additional 50 MMcf/d of temporary interim capacity at the Seneca II processing facility.
- (4) Remaining 100 MMcf/d of capacity at the Seneca III processing complex is available for commitment at our option.

Our midstream infrastructure also includes an 80-mile proprietary water pipeline system for well completion operations that we are currently building. This water pipeline system will cost an anticipated \$525 million, with \$250 million expected to be spent in 2013, and is expected to deliver reliable year-round water supply, lessen water handling costs and decrease water truck traffic on local roadways. We believe this system will reduce our completion costs by up to \$600,000 per horizontal well and anticipate over 30% of our 2013 wells and up to 90% of our 2014 wells will utilize this new infrastructure.

We also have contracted 1,100,000 MMBtu/d of long-haul firm transportation or firm sales capacity on various pipelines and 20,000 Bbl/d of committed ethane takeaway capacity to accommodate our growing production and manage basis differentials.

We will continue to invest significantly in our midstream infrastructure, as it allows us to optimize our processing and takeaway capacity to support our expected rapid production growth, affords us more control over the direction and planning of our drilling schedule and has historically created significant value for our equity owners. In 2013, we estimate we will spend a total of approximately \$500 million on midstream infrastructure. In addition, we believe that our midstream assets may be well suited for a master limited partnership or similar structure. Accordingly, in connection with the completion of this offering, we intend to contribute our midstream assets to Antero Resources Midstream LLC, or Antero

Midstream, a subsidiary formed to hold our midstream business, and enter into commercial arrangements for midstream services with them. Following the completion of this offering, we may also seek opportunities to finance our midstream business on a stand-alone basis. See "Certain Relationships and Related Party Transactions—Antero Midstream" and "Corporate Reorganization."

### **Business Strengths**

Our objective is to build shareholder value through growth in reserves, production and cash flows by developing and expanding our portfolio of low-risk, high-return drilling locations and ensuring timely development of processing and pipeline takeaway capacity. We believe that the following strengths will allow us to successfully execute our business strategies:

- *Large, stable operated position in the core of the Marcellus and Utica Shales.* We own extensive and contiguous land positions in the core areas of two of the premier North American shale plays. We believe our approximately 320,000 net acres in the southwestern core of the Marcellus Shale and our 100,000 net acres in the Utica Shale are characterized by consistent and predictable geology. However, 94% of this acreage is currently undeveloped or does not include wells that have been drilled or completed to a point of producing commercially viable quantities. Approximately 52% of our Marcellus acreage and 20% of our Utica acreage was held by production at June 30, 2013, while an additional 27% and 78%, respectively, does not expire for five years or more. As of June 30, 2013, all of our total aggregate proved, probable and possible reserves were attributable to properties that we operate.
- *Multi-year, low-risk drilling inventory.* Our drilling inventory at June 30, 2013 consisted of 4,576 identified potential horizontal well locations on our existing leasehold acreage. We believe that we and other operators in the area have substantially delineated and de-risked our large contiguous acreage position in the southwestern core of the Marcellus Shale. We have drilled and completed 170 wells on our Marcellus Shale acreage with a success rate of 100%. We have drilled and completed eight horizontal wells in the core of the Utica Shale with a 100% success rate.
- *Exposure to large resource of liquids-rich gas and condensate.* Approximately 82% of our 4,576 identified potential horizontal well locations as of June 30, 2013 target the liquids-rich gas regions of the Marcellus and Utica Shales. The gas content of this liquids-rich gas allows for NGL processing that, coupled with the condensate, can significantly improve well economics. This exposure to a range of liquids contents allows us to optimize our drilling economics across a portfolio of liquids-rich gas locations in order to take advantage of the existing commodity price environment.
- *Low-cost leader.* We are a low-cost leader in the development of our properties. Our ability to drill consistently long laterals, averaging over 7,000 lateral feet, helps us to reduce costs on a per-lateral-foot basis, which is a key competitive advantage. We have implemented operational efficiencies to continue lowering our costs, such as (i) pad drilling, (ii) development of an extensive water pipeline system, (iii) the use of less expensive, shallow vertical drilling rigs to drill to the kick-off point of the horizontal wellbore, (iv) the use of natural gas powered rigs and (v) our proactive approach to meeting our gathering, processing and compression infrastructure needs.
- *Access to committed processing, compression and takeaway capacity in the Marcellus and Utica Shales.* We have contracted a total of 750 MMcf/d of processing capacity in the Marcellus Shale, 400 MMcf/d of which is currently in service. Similarly, we have 250 MMcf/d of contracted processing capacity in the Utica Shale, with potential access to additional capacity. We also have secured 1,100,000 MMBtu/d of long-haul firm transportation or firm sales capacity and have committed to 20,000 Bbl/d of ethane takeaway capacity. We believe our commitment to

midstream infrastructure allows us to commercialize our production more quickly and makes us a logical consolidator of additional acreage in our core areas.

- *Financial strength and flexibility.* As of March 31, 2013, after giving effect to this offering and the application of the net proceeds therefrom, we expect to have approximately \$ million of available borrowing capacity under our credit facility (after deducting \$32 million outstanding letters of credit). After the completion of this offering and the recent increase in lender commitments under our credit facility, together with our operating cash flow and hedging program, we believe we will have the financial flexibility to pursue our currently planned 2013 and 2014 delineation and development drilling activities.
- *Proven and incentivized executive and technical teams.* We believe our management team's experience and expertise across multiple resource plays provides a distinct competitive advantage. Our officers have an average of over 30 years of industry experience in the Rocky Mountain, Midcontinent and Appalachian operating regions and have successfully built, grown and sold two unconventional resource-focused upstream companies and one midstream company in the past 15 years. Additionally, our technical team has drilled over 400 horizontal wells in the Barnett, Woodford, Marcellus and Utica Shales over the past ten years. Our management team has a significant economic interest in us through their interest in our controlling stockholder, Antero Resources Investment LLC, or Antero Investment. Management's percentage interest in our stock held by Antero Investment may increase over time, without diluting public investors, if our stock price appreciates following this offering. We believe our management team's ability to increase their economic interest in us provides significant incentives to grow our stock price for the benefit of all stockholders.

## **Business Strategy**

Our strategy consists of the following principal elements:

- *Create shareholder value through the development of our extensive drilling inventory.* Since initiating our drilling program with one rig in 2009, we have invested over \$2.7 billion in land and drilling in the Appalachian Basin and currently intend to use an average of 17 rigs in 2013. With 15 rigs running in the Marcellus Shale, we are currently the most active driller in the area based on information from RigData. We intend to dedicate substantially all of our \$1.20 billion drilling and completion budget in 2013 to develop our liquids-rich areas. Approximately 85% of the 2013 drilling and completion budget is allocated to the Marcellus Shale, and the remaining 15% is allocated to the Utica Shale.
- *Enhance returns through a focus on optimizing full cycle economics.* We continually monitor and adjust our drilling program on a regular basis with the objective of achieving the highest total returns on our portfolio of drilling opportunities. We believe that we will achieve this objective by (i) minimizing the capital costs of drilling and completing horizontal wells, (ii) maximizing well production and recoveries by optimizing lateral length, the number of frac stages, perforation intervals and the type of fracture stimulation employed, (iii) targeting specific BTU windows within our leasehold position to optimize our hydrocarbon mix based on the existing commodity price environment, (iv) minimizing operating costs through efficient well management, and (v) pursuing infrastructure initiatives, such as the development of our extensive water pipeline system and gas gathering system.

- *Maximize wellhead economics by ensuring timely development of processing and pipeline takeaway capacity and the marketing of our NGLs.* We expect to continue to meaningfully increase our liquids production from the NGLs, oil and condensate associated with our growing natural gas production. We endeavor to ensure that we have sufficient processing capacity in place to recover NGLs when economically desirable. We have also secured long-term firm takeaway capacity and firm sales on major pipelines that are in existence or currently under construction in our core operating areas to accommodate our growing production and to manage basis differentials. Further, we plan to maximize the value of our NGLs through processing and marketing agreements with transporters and NGL end users.
- *Continue growing our core acreage position through leasing and strategic acquisitions.* We intend to continue identifying and acquiring additional acreage and producing assets in our core areas in the Marcellus and Utica Shales. We believe that by managing a large team of dedicated landmen, we have a competitive advantage that enables us to continue to opportunistically add acreage to our core positions. This team of landmen has allowed us to build a large, contiguous acreage position in our Marcellus and Utica Shale plays, making us the logical acreage consolidator in our core areas. We initially targeted and acquired 114,000 net acres in the Marcellus Shale in 2008, based on specific geologic and technical analysis, and have selectively built our position to approximately 320,000 net acres. We started building our targeted Utica Shale acreage position in the fourth quarter of 2011 and currently have approximately 100,000 net acres of leasehold in the core of the liquids-rich window in Ohio.
- *Manage commodity price exposure through an active hedging program to protect our expected future cash flows.* We expect to continue to maintain an active hedging program designed to mitigate volatility in commodity prices and regional basis differentials and to protect our expected future cash flows. As of March 31, 2013, we had entered into hedging contracts through December 31, 2018 covering a total of approximately 918 Bcfe of our projected natural gas and oil production at a weighted average price of \$4.81 per Mcfe. For the period from April 1, 2013 until December 31, 2013, we have hedged approximately 106 Bcfe of our projected natural gas and oil production at a weighted average price of \$4.64 per Mcfe. This hedging program has led to over \$650 million in realized gains over the past five years.

#### **Risk Factors**

An investment in our common stock involves a number of risks. You should carefully consider, in addition to the other information contained in this prospectus, the risks described in "Risk Factors" before investing in our common stock. These risks could materially affect our business, financial condition and results of operations, and cause the trading price of our common stock to decline. You could lose part or all of your investment. You should bear in mind, in reviewing this prospectus, that past experience is no indication of future performance. You should read the section titled "Cautionary Statement Regarding Forward-Looking Statements" for a discussion of what types of statements are forward-looking statements, as well as the significance of such statements in the context of this prospectus.

#### **Corporate Reorganization**

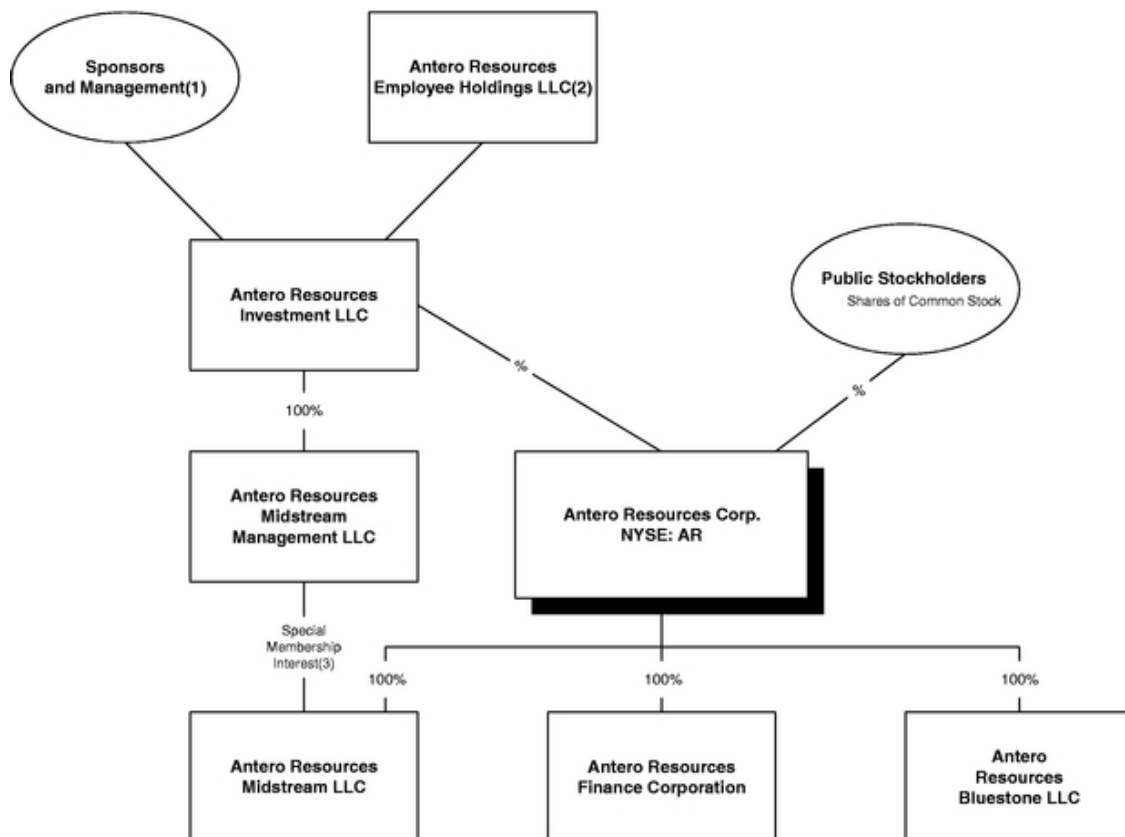
Antero Resources LLC was formed in October 2009 by members of our management team and the Sponsors, as defined below. Antero Resources Appalachian Corporation, a wholly owned subsidiary of Antero Resources LLC, was formed in March 2008 and renamed Antero Resources Corporation in June 2013. Pursuant to the terms of a corporate reorganization, which will be completed immediately prior to or contemporaneously with the closing of this offering, (i) all of the outstanding interests of our existing owners in Antero Resources LLC will be exchanged for similar interests in Antero



Resources Investment LLC, or Antero Investment, and (ii) Antero Resources LLC will be merged into Antero Resources Corporation.

In addition, we intend to transfer our midstream business to Antero Resources Midstream LLC, or Antero Midstream, in connection with the closing of this offering. We will initially own all of the membership interests in Antero Midstream other than a special membership interest, which will be indirectly owned by Antero Investment. The special membership interest in Antero Midstream will provide Antero Investment with certain rights, including the right to cause an initial public offering of Antero Midstream as a master limited partnership or similar structure. Following any such initial public offering, the interest will convert into a non-economic general partner interest in the master limited partnership, which will allow Antero Investment to manage Antero Midstream's business and affairs. Following any such initial public offering, Antero Investment will also hold incentive distribution rights in the master limited partnership, which will represent the right to receive an increasing percentage of the master limited partnership's quarterly cash distributions in excess of specified target distribution levels. See "Certain Relationships and Related Party Transactions—Antero Midstream" and "Corporate Reorganization."

The following diagram indicates our ownership structure after giving effect to our corporate reorganization and assuming no exercise of the underwriters' option to purchase additional shares. See "Corporate Reorganization" for more information regarding our corporate reorganization.



(1) Includes each of our Sponsors and certain members of our management team who have made investments in Antero Investment in exchange for investment units. For information on the entities and individuals who may be deemed to control the Sponsors and for a list of our management team (all of whom hold interests in Antero Investment), see "Principal and Selling Stockholders."

- (2) Holds net profits interests in Antero Investment on behalf of members of our management team and other employees. All of the membership interests in Antero Resources Employee Holdings LLC are held by our employees. The compensation committee of Antero Investment has voting and control rights over the shares held by Antero Resources Employee Holdings LLC.
- (3) Represents an interest that provides Antero Investment with certain rights, including the right to cause an initial public offering of Antero Midstream as a master limited partnership or similar structure. Following any such initial public offering, the interest will convert into a non-economic general partner interest in the master limited partnership, which will allow Antero Investment to manage Antero Midstream's business and affairs. Following any such initial public offering, Antero Investment will also hold incentive distribution rights in the master limited partnership, which will represent the right to receive an increasing percentage of the master limited partnership's quarterly cash distributions in excess of specified target distribution levels. See "Certain Relationships and Related Party Transactions—Antero Midstream."

### **Our Principal Stockholders**

Following the completion of this offering and our corporate reorganization, Antero Investment will directly own      % of our common stock, or      % if the underwriters' option to purchase additional shares is exercised in full. Antero Investment is primarily owned by investment funds affiliated with or managed by Warburg Pincus LLC, Yorktown Partners LLC and Trilantic Capital Partners, or collectively, the Sponsors, and certain members of our management. See "Principal and Selling Stockholders" and "Corporate Reorganization—Limited Liability Company Agreement of Antero Investment."

Warburg Pincus LLC is a leading global private equity firm focused on growth investing. The firm has more than \$40 billion in assets under management. Its active portfolio of more than 125 companies is highly diversified by stage, sector and geography. Warburg Pincus is an experienced partner to management teams seeking to build durable companies with sustainable value. Founded in 1966, Warburg Pincus has raised 13 private equity funds which have invested more than \$45 billion in over 675 companies in more than 35 countries. Since the late 1980s, Warburg Pincus has invested more than \$6 billion in energy and natural resources companies around the world. In addition to Antero Resources LLC, notable energy investments for which the firm was lead founding investor include Bill Barrett Corporation (NYSE: BBG), Encore Acquisition Company (NYSE: EAC, since acquired by Denbury Resources), Kosmos Energy (NYSE: KOS), Laredo Petroleum (NYSE: LPI), MEG Energy (TSX: MEG), Newfield Exploration (NYSE: NFX), Spinnaker Exploration (NYSE: SKE, since acquired by Norsk Hydro/Statoil) and Targa Resources (NYSE: NGLS, TRGP). The firm is headquartered in New York with offices in Amsterdam, Beijing, Frankfurt, Hong Kong, London, Luxembourg, Mumbai, Port Louis, San Francisco, Sao Paulo and Shanghai.

Yorktown Partners LLC is a private investment manager investing exclusively in the energy industry with an emphasis on North American oil and gas production, and midstream businesses. Yorktown has raised 10 private equity funds totaling over \$6.5 billion. Yorktown's investors include university endowments, foundations, families, insurance companies, and other institutional investors. The firm is headquartered in New York.

Trilantic Capital Partners is a global private equity firm focused on control and significant minority investments in North America and Europe with primary investment focus in the business services, consumer, energy and financial sectors. The firm currently manages four institutional private equity funds with aggregate capital commitments of \$5.7 billion. Trilantic has offices in New York, London, Guernsey and Luxembourg.

### **Emerging Growth Company Status**

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act, or the JOBS Act. For as long as we are an emerging growth company, unlike other public companies, we will not be required to:

- provide an auditor's attestation report on management's assessment of the effectiveness of our system of internal control over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act of 2002;
- comply with any new requirements adopted by the Public Company Accounting Oversight Board, or the PCAOB, requiring mandatory audit firm rotation or a supplement to the auditor's report in which the auditor would be required to provide additional information about the audit and the financial statements of the issuer;
- comply with any new audit rules adopted by the PCAOB after April 5, 2012, unless the Securities and Exchange Commission, or the SEC, determines otherwise;
- provide certain disclosure regarding executive compensation required of larger public companies; or
- obtain shareholder approval of any golden parachute payments not previously approved.

We will cease to be an "emerging growth company" upon the earliest of:

- the last day of the fiscal year in which we have \$1.0 billion or more in annual revenues;
- the date on which we become a large accelerated filer;
- the date on which we issue more than \$1.0 billion of non-convertible debt over a three-year period; or
- the last day of the fiscal year following the fifth anniversary of our initial public offering.

In addition, Section 107 of the JOBS Act provides that an emerging growth company can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act for complying with new or revised accounting standards, but we intend to irrevocably opt out of the extended transition period.

### **Corporate Information**

Our principal executive offices are located at 1625 17th Street, Denver, Colorado 80202, and our telephone number at that address is (303) 357-7310. Our website is located at [www.anteroresources.com](http://www.anteroresources.com). We expect to make our periodic reports and other information filed with or furnished to the SEC available free of charge through our website as soon as reasonably practicable after those reports and other information are electronically filed with or furnished to the SEC. Information on our website or any other website is not incorporated by reference herein and does not constitute a part of this prospectus.

**The Offering**

Common stock offered by us	shares.
Common stock to be outstanding after the offering	shares.
Option to purchase additional shares	The selling stockholder has granted the underwriters a 30-day option to purchase up to an aggregate of additional shares of our common stock held by the selling stockholder to cover over-allotments.
Use of proceeds	<p>We expect to receive approximately \$ of net proceeds from the sale of the common stock offered by us after deducting underwriting discounts and commissions and estimated offering expenses payable by us.</p> <p>We intend to use the net proceeds from this offering to repay approximately \$ million of outstanding borrowings under our credit facility and to fund approximately \$ million of our capital expenditure program.</p> <p>We will not receive any of the proceeds from the sale of shares of our common stock by the selling stockholder pursuant to any exercise by the underwriters of their option to purchase additional shares of our common stock.</p> <p>Affiliates of certain of the underwriters are lenders under our credit facility and, accordingly, will receive a portion of the proceeds of this offering. See "Underwriting (Conflicts of Interest)."</p>
Conflicts of interest	<p>Because affiliates of Barclays Capital Inc., Citigroup Global Markets Inc., J.P. Morgan Securities LLC, Wells Fargo Securities, LLC and are lenders under our credit facility and will each receive more than 5% of the net proceeds of this offering due to the repayment of borrowings under the credit facility, such underwriters are deemed to have a conflict of interest within the meaning of Rule 5121 of the Financial Industry Regulatory Authority, or FINRA. Accordingly, this offering will be conducted in accordance with Rule 5121, which requires, among other things, that a "qualified independent underwriter" has participated in the preparation of, and has exercised the usual standards of "due diligence" with respect to, the registration statement and this prospectus. Jefferies LLC has agreed to act as qualified independent underwriter for this offering and to undertake the legal responsibilities and liabilities of an underwriter under the Securities Act, specifically including those inherent in Section 11 of the Securities Act. Jefferies LLC will not receive any additional fees for serving as qualified independent underwriter in connection with this offering. We have agreed to indemnify Jefferies LLC against liabilities incurred in connection with acting as a qualified independent underwriter, including liabilities under the Securities Act. See "Underwriting (Conflicts of Interest)."</p>

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Dividend policy	We do not anticipate paying any cash dividends on our common stock. In addition, our credit facility and the indentures governing our senior notes place certain restrictions on our ability to pay cash dividends.
Risk factors	You should carefully read and consider the information set forth under the heading "Risk Factors" and all other information set forth in this prospectus before deciding to invest in our common stock.
Listing and trading symbol	We have applied to list our common stock on the New York Stock Exchange, or the NYSE, under the symbol "AR".
The information above excludes                      shares of common stock reserved for issuance under our 2013 Long-Term Incentive Plan, or the LTIP, that we intend to adopt in connection with the completion of this offering.	

### **Summary Historical Consolidated Financial Data**

The following table shows our summary historical consolidated financial data, for the periods and as of the dates indicated, for Antero Resources LLC and its subsidiaries.

The summary statement of operations data for the years ended December 31, 2010, 2011 and 2012 and the balance sheet data as of December 31, 2011 and 2012 are derived from our audited consolidated financial statements included elsewhere in this prospectus. The balance sheet data as of December 31, 2010 is derived from our audited consolidated financial statements not included in this prospectus. The summary statement of operations data for the three months ended March 31, 2012 and 2013 and the balance sheet data as of March 31, 2013 are derived from our unaudited consolidated financial statements included elsewhere in this prospectus. The balance sheet data as of March 31, 2012 is derived from our unaudited consolidated financial statements not included in this prospectus.

The statement of operations data for all periods presented has been recast to present the results of operations from our Piceance Basin and Arkoma Basin operations in discontinued operations. The losses on the sales of these properties are also included in discontinued operations in 2012. The results from continuing operations reflect our remaining operations in the Appalachian Basin. No part of our general and administrative expenses or interest expense was allocated to discontinued operations.

The summary historical consolidated financial data has been prepared on a consistent basis with our audited consolidated financial statements. In the opinion of management, such summary historical consolidated financial data reflects all adjustments (consisting of normal and recurring accruals) considered necessary to present our financial position for the periods presented.

The results of operations for the interim periods are not necessarily indicative of the results that may be expected for the full year because of the impact of fluctuations in prices received from natural gas and oil, natural production declines, the uncertainty of exploration and development drilling results and other factors. The summary financial data presented below are qualified in their entirety by reference to, and should be read in conjunction with, "Capitalization," "Management's Discussion and

Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes included elsewhere herein.

	Year Ended December 31,			Three Months Ended	
	2010	2011	2012	2012	2013
(in thousands)					
<b>Statement of operations data:</b>					
Operating revenues:					
Natural gas, NGLs and oil production revenues	\$ 47,431	\$ 195,289	\$ 264,982	\$ 45,182	\$ 133,395
Realized gains on commodity derivative instruments	15,063	49,944	178,491	46,852	48,131
Unrealized gains (losses) on commodity derivative instruments	62,536	446,120	1,055	170,402	(120,072)
Gain on sale of assets	—	—	291,190	291,305	—
Total revenues	125,030	691,353	735,718	553,741	61,454
Operating expenses:					
Lease operating expenses	1,158	4,608	6,243	693	1,071
Gathering, compression, processing and transportation	9,237	37,315	91,094	11,575	40,970
Production taxes	2,885	11,915	20,210	3,742	8,619
Exploration expenses	2,350	4,034	14,675	1,804	4,362
Impairment of unproved properties	6,076	4,664	12,070	286	1,556
Depletion, depreciation and amortization	18,522	55,716	102,026	16,110	40,364
Accretion of asset retirement obligations	11	76	101	22	264
Expenses related to acquisition of business	2,544	—	—	—	—
General and administrative	21,952	33,342	45,284	9,173	12,717
Loss on sale of compressor station	—	8,700	—	—	—
Total operating expenses	64,735	160,370	291,703	43,405	109,923
Operating income (loss)	60,295	530,983	444,015	510,336	(48,469)
Other expense:					
Interest expense	\$ (56,463)	\$ (74,404)	\$ (97,510)	\$ (24,370)	\$ (29,928)
Realized and unrealized losses on interest derivative instruments, net	(2,677)	(94)	—	—	—
Total other expense	(59,140)	(74,498)	(97,510)	(24,370)	(29,928)
Income (loss) before income taxes	1,155	456,485	346,505	485,966	(78,397)
Income tax (expense) benefit	(939)	(185,297)	(121,229)	(198,411)	30,400
Income (loss) from continuing operations	216	271,188	225,276	287,555	(47,997)
Discontinued operations:					
Income (loss) from results of operations and sale of discontinued operations	228,412	121,490	(510,345)	40,176	—
Net income (loss) attributable to Antero equity owners	\$ 228,628	\$ 392,678	\$ (285,069)	\$ 327,731	\$ (47,997)
<b>Balance sheet data (at period end):</b>					
Cash and cash equivalents	\$ 8,988	\$ 3,343	\$ 18,989	\$ 6,493	\$ 4,806
Property and equipment, net	2,159,762	2,880,414	2,937,473	3,011,500	3,534,068
Total assets	2,486,287	3,788,800	3,618,793	4,127,938	4,092,879
Long-term indebtedness	652,632	1,317,330	1,444,058	1,095,252	1,862,530
Total equity	1,594,987	1,958,806	1,673,737	2,286,537	1,625,740
<b>Other financial data:</b>					
EBITDAX from continuing operations(1)	\$ 27,824	\$ 160,259	\$ 284,710	\$ 67,651	\$ 118,749
EBITDAX from discontinued operations(1)	169,854	180,562	149,605	54,689	—
Total EBITDAX(1)	\$ 197,678	\$ 340,821	\$ 434,315	\$ 122,340	\$ 118,749
Net cash provided by operating activities	127,791	266,307	332,255	100,491	110,207
Net cash provided by (used in) investing activities	(230,672)	(901,249)	(463,491)	124,699	(547,885)
Net cash provided by (used in) financing activities	101,200	629,297	146,882	(222,040)	423,495
Capital expenditures(2)	423,002	929,887	1,755,430	259,692	638,496

- (1) "EBITDAX" is a non-GAAP financial measure that we define as net income (loss) before interest expense or interest income, realized and unrealized gains or losses on interest rate derivative instruments, taxes, impairments, depletion, depreciation, amortization, exploration expense, unrealized commodity hedge gains or losses, franchise taxes, stock compensation, business acquisition and gain or loss on sale of assets. "EBITDAX," as used and defined by us, may not be comparable to similarly titled measures employed by other companies and is not a measure of performance calculated in accordance with GAAP. EBITDAX should not be considered in isolation or as a substitute for operating income, net

income or loss, cash flows provided by operating, investing and financing activities, or other income or cash flow statement data prepared in accordance with GAAP. EBITDAX provides no information regarding a company's capital structure, borrowings, interest costs, capital expenditures, and working capital movement or tax position. EBITDAX does not represent funds available for discretionary use because those funds may be required for debt service, capital expenditures, working capital, income taxes, franchise taxes, exploration expenses, and other commitments and obligations. However, our management team believes EBITDAX is useful to an investor in evaluating our financial performance because this measure:

- is widely used by investors in the oil and natural gas industry to measure a company's operating performance without regard to items excluded from the calculation of such term, which can vary substantially from company to company depending upon accounting methods and book value of assets, capital structure and the method by which assets were acquired, among other factors;
- helps investors to more meaningfully evaluate and compare the results of our operations from period to period by removing the effect of our capital structure from our operating structure; and
- is used by our management team for various purposes, including as a measure of operating performance, in presentations to our board of directors, as a basis for strategic planning and forecasting and by our lenders pursuant to covenants under our credit facility and the indentures governing our senior notes.

There are significant limitations to using EBITDAX as a measure of performance, including the inability to analyze the effect of certain recurring and non-recurring items that materially affect our net income or loss, the lack of comparability of results of operations of different companies and the different methods of calculating EBITDAX reported by different companies. The following table represents a reconciliation of our net income (loss) from continuing operations to EBITDAX from continuing operations, a reconciliation of our net income (loss) from discontinued operations to EBITDAX from discontinued operations, and a reconciliation of our total EBITDAX to net cash provided by operating activities per our consolidated statements of cash flows, in each case for the periods presented:

	Year Ended December 31,			Three Months Ended	
	2010	2011	2012	2012	2013
	(in thousands)				
Net income (loss) from continuing operations	\$ 216	\$ 271,188	\$ 225,276	\$ 287,555	\$ (47,997)
Unrealized (gains) losses on commodity derivative contracts	(62,536)	(446,120)	(1,055)	(170,402)	120,072
(Gain) loss on sale of assets	—	8,700	(291,190)	(291,305)	—
Interest expense and other	59,140	74,498	97,510	24,370	29,928
Provision (benefit) for income taxes	939	185,297	121,229	198,411	(30,400)
Depreciation, depletion, amortization, and accretion	18,533	55,792	102,127	16,132	40,628
Impairment of unproved properties	6,076	4,664	12,070	286	1,556
Exploration expense	2,350	4,034	14,675	1,804	4,362
Other	3,106	2,206	4,068	800	600
EBITDAX from continuing operations	27,824	160,259	284,710	67,651	118,749
Net income (loss) from discontinued operations	228,412	121,490	(510,345)	40,176	—
Unrealized (gains) losses on commodity derivative contracts	(108,035)	(113,476)	45,808	(32,561)	—
(Gain) loss on sale of assets	(147,559)	—	795,945	—	—
Provision (benefit) for income taxes	29,070	45,155	(272,553)	14,444	—
Depreciation, depletion, amortization, and accretion	115,739	115,164	89,124	31,668	—
Impairment of unproved properties	29,783	6,387	962	750	—
Exploration expense	22,444	5,842	664	212	—
EBITDAX from discontinued operations	169,854	180,562	149,605	54,689	—
Total EBITDAX	\$ 197,678	\$ 340,821	\$ 434,315	\$ 122,340	\$ 118,749
Interest expense and other	(59,140)	(74,498)	(97,510)	(24,370)	(29,928)
Exploration expense	(24,794)	(9,876)	(15,339)	(2,016)	(4,362)
Changes in current assets and current liabilities	(698)	8,309	9,887	4,194	24,961
Other	14,745	1,551	902	343	787
Net cash provided by operating activities	\$ 127,791	\$ 266,307	\$ 332,255	\$ 100,491	\$ 110,207

- (2) Capital expenditures as shown in this table differ from the amounts shown in the statement of cash flows in the consolidated financial statements because amounts in this table include changes in accounts payable for capital expenditures from the previous reporting period while the amounts in the statement of cash flows in the financial statements are presented on a cash basis.



## Summary Reserve, Production and Operating Data

### Summary Reserve Data

The following table summarizes our estimated proved reserves and related standardized measure and PV-10 at December 31, 2010, 2011 and 2012 and June 30, 2013 based on SEC pricing (and not giving effect to any pricing sensitivities). See "Business—Our Operations—Reserve Data" for an illustration of the sensitivity of our estimated reserves and related PV-10 to changes in product price levels.

Our estimated proved reserves and PV-10 as of December 31, 2012 and June 30, 2013 are based on evaluations prepared by our internal reserve engineers, which have been audited by our independent reserve engineers, DeGolyer and MacNaughton, or D&M. Our estimated proved reserves as of December 31, 2011 were based on evaluations prepared by our internal reserve engineers, which were audited by D&M and Ryder Scott & Company, or Ryder Scott. Over 99% of our estimated proved reserves as of December 31, 2010 were prepared by D&M or Ryder Scott. We refer to these firms collectively as our independent reserve engineers. Copies of the summary reports of D&M and Ryder Scott with respect to our reserves as of December 31, 2010, 2011 and 2012 are filed as exhibits to the registration statement of which this prospectus forms a part. See "Business—Our Operations—Reserve Data—Preparation of Reserve Estimates" for definitions of proved, probable and possible reserves and the technologies and economic data used in their estimation. See "—Our Properties—Reserves."

Our estimated proved reserves at December 31, 2010 and 2011 included reserves attributable to our Arkoma Basin and Piceance Basin assets that were sold during 2012. The information in the following table does not give any effect to or reflect our commodity hedges. In addition, the estimated proved reserves below assume ethane recovery as of December 31, 2010, 2011 and 2012 and ethane rejection as of June 30, 2013 on our liquids-rich natural gas. See "Business—Our Operations—Reserve Data" for more information about our reserves and pricing sensitivities.

	At December 31,			At June 30,
	2010	2011	2012	2013
Estimated proved reserves:				
Natural gas (Bcf)	2,543	3,931	3,694	5,724
NGLs (MMBbl)	104	164	203	88
Oil (MMBbl)	10	17	3	5
Total equivalent proved reserves (Bcfe)	3,231	5,017	4,929	6,282
Total equivalent proved developed reserves (Bcfe)	457	844	1,047	1,445
Percent proved developed	14%	17%	21%	23%
Total equivalent proved undeveloped reserves (Bcfe)	2,774	4,173	3,882	4,837
PV-10 of proved reserves (in millions)(1)	\$ 1,466	\$ 3,445	\$ 1,923	\$ 4,468
Standardized measure (in millions)(1)	\$ 1,097	\$ 2,470	\$ 1,601	*

- (1) PV-10 was prepared using SEC pricing, discounted at 10% per annum, without giving effect to taxes or hedges. PV-10 is a non-GAAP financial measure. We believe that the presentation of PV-10 is relevant and useful to our investors as supplemental disclosure to the standardized measure of future net cash flows, or after tax amount, because it presents the discounted future net cash flows attributable to our reserves prior to taking into account future corporate income taxes and our current tax structure. While the standardized measure is dependent on the unique tax situation of each company, PV-10 is based on a pricing methodology and discount factors that are consistent for all companies. Because of this, PV-10 can be used within the industry and by creditors and securities analysts to evaluate estimated net cash flows from proved reserves on a

more comparable basis. Investors should be cautioned that neither PV-10 nor standardized measure represents an estimate of the fair market value of our proved reserves.

The following table sets forth the estimated future net cash flows from our proved reserves (without giving effect to our commodity hedges), the present value of those net cash flows before income tax (PV-10), the present value of those net cash flows after income tax (standardized measure) and the prices used in projecting future net cash flows at December 31, 2010, 2011 and 2012 and June 30, 2013:

(In millions, except per Mcf data)	At December 31,			At June 30,
	2010(a)	2011(b) (unaudited)	2012(c)	2013(d)
Future net cash flows	\$ 5,990	\$ 11,470	\$ 7,221	\$ 14,411
Present value of future net cash flows:				
Before income tax (PV-10)	\$ 1,466	\$ 3,445	\$ 1,923	\$ 4,468
Income taxes	(369)	(975)	(322)	*
After income tax (standardized measure)	\$ 1,097	\$ 2,470	\$ 1,601	*

- (a) 12-month average prices used at December 31, 2010 were \$4.18 per Mcf for the Arkoma Basin, \$3.93 per Mcf for the Piceance Basin and \$4.51 for the Appalachian Basin.
- (b) 12-month average prices used at December 31, 2011 were \$3.90 per Mcf for the Arkoma Basin, \$3.84 per Mcf for the Piceance Basin and \$4.16 per Mcf for the Appalachian Basin.
- (c) 12-month average prices used at December 31, 2012 were \$2.78 per Mcf for natural gas, \$21.75 per Bbl for NGLs and \$85.05 per Bbl for oil.
- (d) 12-month average prices used at June 30, 2013 were \$3.43 per Mcf for natural gas, \$45.66 per Bbl for NGLs and \$81.65 per Bbl for oil.
- \* With respect to PV-10 calculated as of an interim date, it is not practicable to calculate the taxes for the related interim period because GAAP does not provide for disclosure of standardized measure on an interim basis.

Future net cash flows represent projected revenues from the sale of proved reserves net of production and development costs (including operating expenses and production taxes). Prices for 2010, 2011, 2012, and 2013 were based on 12-month unweighted average of the first-day-of-the-month pricing, without escalation. Costs are based on costs in effect for the applicable year without escalation. There can be no assurance that the proved reserves will be produced as estimated or that the prices and costs will remain constant. There are numerous uncertainties inherent in estimating reserves and related information and different reserve engineers often arrive at different estimates for the same properties.

***Production, Revenues and Price History***

The following table sets forth information regarding our production, our revenues and realized prices, and production costs from continuing operations in the Appalachian Basin for the years ended December 31, 2010, 2011 and 2012 and for the three months ended March 31, 2012 and 2013. For additional information on price calculations, see information set forth in "Management's Discussion and Analysis of Financial Condition and Results of Operations."

*Continuing Operations Data—Appalachian Basin*

	<u>Year Ended December 31,</u>			<u>Three Months Ended March 31,</u>	
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2012</u>	<u>2013</u>
<b>Production data:</b>					
Natural gas (Bcf)	11	45	87	16	33
NGLs (MBbl)	—	—	71	—	205
Oil (MBbl)	—	2	19	1	10
Total combined production (Bcfe)	11	45	87	16	34
Average daily combined production (MMcfe/d)	30	124	239	177	383
<b>Average sales prices:</b>					
Natural gas (per Mcf)	\$ 4.39	\$ 4.33	\$ 2.99	\$ 2.80	\$ 3.67
NGLs (per Bbl)	\$ —	\$ —	\$ 52.09	\$ —	\$ 51.55
Oil (per Bbl)	\$ —	\$ 97.19	\$ 80.34	\$ 102.13	\$ 86.12
Combined average sales prices before effects of hedges (per Mcfe)(1)	\$ 4.39	\$ 4.33	\$ 3.03	\$ 2.80	\$ 3.87
Combined average sales prices after effects of hedges (per Mcfe)(1)	\$ 5.78	\$ 5.44	\$ 5.08	\$ 5.70	\$ 5.26
<b>Average costs per Mcfe:</b>					
Lease operating costs	\$ 0.11	\$ 0.10	\$ 0.07	\$ 0.04	\$ 0.03
Gathering, compression, processing and transportation	\$ 0.85	\$ 0.83	\$ 1.04	\$ 0.72	\$ 1.19
Production taxes	\$ 0.27	\$ 0.26	\$ 0.23	\$ 0.23	\$ 0.25
Depreciation, depletion, amortization and accretion	\$ 1.71	\$ 1.24	\$ 1.17	\$ 1.00	\$ 1.18
General and administrative	\$ 2.03	\$ 0.74	\$ 0.52	\$ 0.57	\$ 0.37

- (1) Average sales prices shown reflect both of the before and after effects of our realized commodity hedging transactions. Our calculation of such effects includes realized gains or losses on cash settlements for commodity derivatives, which do not qualify for hedge accounting because we do not designate them as hedges.

*Discontinued Operations Data—Arkoma and Piceance Basins*

The table above does not include the following production or revenue from discontinued operations from the Arkoma and Piceance Basin properties which were sold in 2012:

	<u>Year Ended December 31,</u>		
	<u>2010</u>	<u>2011</u>	<u>2012</u>
Production (combined Bcfe)	36	44	35
Natural gas, NGL and oil production revenues (in millions)	\$ 159	\$ 197	\$ 125

## RISK FACTORS

*Investing in our common stock involves risks. You should carefully consider the information in this prospectus, including the matters addressed under "Cautionary Statement Regarding Forward-Looking Statements," and the following risks before making an investment decision. The trading price of our common stock could decline due to any of these risks, and you may lose all or part of your investment.*

### Risks Related to Our Business

***Natural gas, NGL and oil prices are volatile. A substantial or extended decline in commodity prices may adversely affect our business, financial condition or results of operations and our ability to meet our capital expenditure obligations and financial commitments.***

The prices we receive for our natural gas, NGL and oil production heavily influence our revenue, profitability, access to capital and future rate of growth. Natural gas, NGLs and oil are commodities and, therefore, their prices are subject to wide fluctuations in response to relatively minor changes in supply and demand. Historically, the commodities market has been volatile. This market will likely continue to be volatile in the future. The prices we receive for our production, and the levels of our production, depend on numerous factors beyond our control. These factors include the following:

- worldwide and regional economic conditions impacting the global supply and demand for natural gas, NGLs and oil;
- the price and quantity of imports of foreign natural gas, including liquefied natural gas;
- political conditions in or affecting other producing countries, including conflicts in the Middle East, Africa, South America and Russia;
- the level of global exploration and production;
- the level of global inventories;
- prevailing prices on local price indexes in the areas in which we operate;
- localized and global supply and demand fundamentals and transportation availability;
- weather conditions;
- technological advances affecting energy consumption;
- the price and availability of alternative fuels; and
- domestic, local and foreign governmental regulation and taxes.

Furthermore, the worldwide financial and credit crisis in recent years has reduced the availability of liquidity and credit to fund the continuation and expansion of industrial business operations worldwide resulting in a slowdown in economic activity and recession in parts of the world. This has reduced worldwide demand for energy and resulted in lower natural gas, NGL and oil prices.

Lower commodity prices will reduce our cash flows and borrowing ability. We may be unable to obtain needed capital or financing on satisfactory terms, which could lead to a decline in our reserves as existing reserves are depleted. Lower commodity prices may also reduce the amount of natural gas, NGLs and oil that we can produce economically.

If commodity prices further decrease, a significant portion of our exploitation, development and exploration projects could become uneconomic. This may result in our having to make significant downward adjustments to our estimated proved reserves. As a result, a substantial or extended decline in commodity prices may materially and adversely affect our future business, financial condition, results of operations, liquidity or ability to finance planned capital expenditures.

***Our exploitation, development and exploration projects require substantial capital expenditures. We may be unable to obtain required capital or financing on satisfactory terms, which could lead to a decline in our natural gas reserves.***

The natural gas industry is capital intensive. We make and expect to continue to make substantial capital expenditures for the exploitation, development and acquisition of natural gas reserves. Our cash flow used in investing activities related to capital and exploration expenditures was approximately \$1.68 billion in 2012. Our board of directors has approved a capital budget for 2013 of \$1.95 billion, including \$1.20 billion for drilling and completion, \$250 million for leasehold acquisitions, and \$500 million for the construction of water handling infrastructure and gas gathering pipelines and facilities. Our capital budget excludes acquisitions. As of March 31, 2013, we had spent approximately \$548 million of our 2013 capital budget. We expect to fund these capital expenditures with cash generated by operations, the proceeds of this offering, borrowings under our credit facility and possibly through additional sales of gathering assets or capital market transactions. The actual amount and timing of our future capital expenditures may differ materially from our estimates as a result of, among other things, commodity prices, actual drilling results, the availability of drilling rigs and other services and equipment, and regulatory, technological and competitive developments. A reduction in commodity prices from current levels may result in a decrease in our actual capital expenditures, which would negatively impact our ability to grow production. We intend to finance our future capital expenditures primarily through cash flow from operations and through borrowings under our credit facility; however, our financing needs may require us to alter or increase our capitalization substantially through the issuance of debt or equity securities or the sale of assets. The issuance of additional indebtedness would require that a portion of our cash flow from operations be used for the payment of interest and principal on our indebtedness, thereby reducing our ability to use cash flow from operations to fund working capital, capital expenditures and acquisitions.

Our cash flow from operations and access to capital are subject to a number of variables, including:

- our proved reserves;
- the level of hydrocarbons we are able to produce from existing wells;
- the prices at which our production is sold;
- our ability to acquire, locate and produce new reserves; and
- our ability to borrow under our credit facility.

If our revenues or the borrowing base under our credit facility decrease as a result of lower natural gas prices, operating difficulties, declines in reserves or for any other reason, we may have limited ability to obtain the capital necessary to sustain our operations at current levels. If additional capital is needed, we may not be able to obtain debt or equity financing on terms acceptable to us, if at all. If cash flow generated by our operations or available borrowings under our credit facility are not sufficient to meet our capital requirements, the failure to obtain additional financing could result in a curtailment of our operations relating to development of our properties, which in turn could lead to a decline in our reserves and production, and could adversely affect our business, financial condition and results of operations.

***Drilling for and producing natural gas are high risk activities with many uncertainties that could adversely affect our business, financial condition or results of operations.***

Our future financial condition and results of operations will depend on the success of our exploitation, development and acquisition activities, which are subject to numerous risks beyond our control, including the risk that drilling will not result in commercially viable natural gas production.

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Our decisions to purchase, explore, develop or otherwise exploit prospects or properties will depend in part on the evaluation of data obtained through geophysical and geological analyses, production data and engineering studies, the results of which are often inconclusive or subject to varying interpretations. For a discussion of the uncertainty involved in these processes, see "—Reserve estimates depend on many assumptions that may turn out to be inaccurate. Any material inaccuracies in our reserve estimates or underlying assumptions will materially affect the quantities and present value of our reserves." In addition, our cost of drilling, completing and operating wells is often uncertain before drilling commences.

Further, many factors may curtail, delay or cancel our scheduled drilling projects, including the following:

- delays imposed by or resulting from compliance with regulatory requirements;
- pressure or irregularities in geological formations;
- shortages of or delays in obtaining equipment and qualified personnel or in obtaining water for hydraulic fracturing activities;
- equipment failures or accidents;
- adverse weather conditions, such as blizzards, tornados, hurricanes and ice storms;
- issues related to compliance with environmental regulations;
- environmental hazards, such as natural gas leaks, oil spills, pipeline and tank ruptures, encountering naturally occurring radioactive materials, and unauthorized discharges of brine, well stimulation and completion fluids, toxic gases or other pollutants into the surface and subsurface environment;
- declines in natural gas prices;
- limited availability of financing at acceptable terms;
- title problems; and
- limitations in the market for natural gas.

***We may not be able to generate sufficient cash to service all of our indebtedness and may be forced to take other actions to satisfy our obligations under our indebtedness, which may not be successful.***

Our ability to make scheduled payments on or to refinance our indebtedness obligations, including our credit facility, our \$525 million of 9.375% senior notes due 2017, our \$400 million of 7.25% senior notes due 2019 and our \$525 million of 6.00% senior notes due 2020, depends on our financial condition and operating performance, which are subject to prevailing economic and competitive conditions and certain financial, business and other factors beyond our control. We may not be able to maintain a level of cash flows from operating activities sufficient to permit us to pay the principal, premium, if any, and interest on our indebtedness, including the senior notes.

If our cash flows and capital resources are insufficient to fund our debt service obligations, we may be forced to reduce or delay investments and capital expenditures, sell assets, seek additional capital or restructure or refinance our indebtedness, including the senior notes. Our ability to restructure or refinance our indebtedness will depend on the condition of the capital markets and our financial condition at such time. Any refinancing of our indebtedness could be at higher interest rates and may require us to comply with more onerous covenants, which could further restrict our business operations. The terms of existing or future debt instruments, including the indentures governing our senior notes, may restrict us from adopting some of these alternatives. In addition, any failure to make payments of interest and principal on our outstanding indebtedness on a timely basis would likely result in a

reduction of our credit rating, which could harm our ability to incur additional indebtedness. In the absence of sufficient cash flows and capital resources, we could face substantial liquidity problems and might be required to dispose of material assets or operations to meet our debt service and other obligations. Our credit facility and the indentures governing our senior notes currently restrict our ability to dispose of assets and our use of the proceeds from such disposition. We may not be able to consummate those dispositions, and the proceeds of any such disposition may not be adequate to meet any debt service obligations then due. These alternative measures may not be successful and may not permit us to meet our scheduled debt service obligations.

The borrowing base under our credit facility is currently \$1.75 billion, and lender commitments under the credit facility are \$1.2 billion. Our next scheduled borrowing base redetermination is expected to occur in October 2013. In the future, we may not be able to access adequate funding under our credit facility as a result of a decrease in our borrowing base due to the issuance of new indebtedness, the outcome of a subsequent semi-annual borrowing base redetermination or an unwillingness or inability on the part of our lending counterparties to meet their funding obligations and the inability of other lenders to provide additional funding to cover the defaulting lender's portion. Declines in commodity prices could result in a determination to lower the borrowing base in the future and, in such a case, we could be required to repay any indebtedness in excess of the redetermined borrowing base. As a result, we may be unable to implement our drilling and development plan, make acquisitions or otherwise carry out our business plan, which would have a material adverse effect on our financial condition and results of operations and impair our ability to service our indebtedness.

***We are required to pay fees to our service providers based on minimum volumes regardless of actual volume throughput.***

We have various gas processing, gathering and compression service agreements in place, each with minimum volume delivery commitments. As of March 31, 2013, our long-term contractual obligation under these agreements was \$1.15 billion. We are obligated to pay fees on minimum volumes to our service providers regardless of actual volume throughput, which could be significant and have a material adverse effect on our results of operations. If these fees on minimum volumes are substantial, we may not be able to generate sufficient cash to cover these obligations, which may require us to reduce or delay our planned investments and capital expenditures or seek alternative means of financing.

***Restrictions in our existing and future debt agreements could limit our growth and our ability to engage in certain activities.***

Our credit facility contains a number of significant covenants (in addition to covenants restricting the incurrence of additional indebtedness), including restrictive covenants that may limit our ability to, among other things:

- sell assets;
- make loans to others;
- make investments;
- enter into mergers;
- make certain payments;
- hedge future production;
- incur liens; and
- engage in certain other transactions without the prior consent of the lenders.

The indentures governing our senior notes contain similar restrictive covenants. In addition, our credit facility requires us to maintain certain financial ratios or to reduce our indebtedness if we are unable to comply with such ratios. These restrictions, together with those in the indentures governing our senior notes, may also limit our ability to obtain future financings to withstand a future downturn in our business or the economy in general, or to otherwise conduct necessary corporate activities. We may also be prevented from taking advantage of business opportunities that arise because of the limitations that the restrictive covenants under the indentures governing our senior notes and our credit facility impose on us.

Our credit facility limits the amounts we can borrow up to a borrowing base amount, which the lenders, in their sole discretion, determine on a semi-annual basis based upon projected revenues from the natural gas properties securing our loan. The lenders can unilaterally adjust the borrowing base and the borrowings permitted to be outstanding under our credit facility. Any increase in the borrowing base requires the consent of the lenders holding 100% of the commitments. If the requisite number of lenders do not agree to an increase, then the borrowing base will be the lowest borrowing base acceptable to such lenders. Outstanding borrowings in excess of the borrowing base must be repaid, or we must pledge other natural gas properties as additional collateral after applicable grace periods. We do not currently have any substantial unpledged properties, and we may not have the financial resources in the future to make mandatory principal prepayments required under our credit facility. The borrowing base under our credit facility is currently \$1.75 billion and lender commitments are \$1.2 billion. Our next scheduled borrowing base redetermination is expected to occur in October 2013.

A breach of any covenant in our credit facility would result in a default under that agreement after any applicable grace periods. A default, if not waived, could result in acceleration of the indebtedness outstanding under the facility and in a default with respect to, and an acceleration of, the indebtedness outstanding under other debt agreements. The accelerated indebtedness would become immediately due and payable. If that occurs, we may not be able to make all of the required payments or borrow sufficient funds to refinance such indebtedness. Even if new financing were available at that time, it may not be on terms that are acceptable to us.

***Currently, we receive significant incremental cash flows as a result of our hedging activity. To the extent we are unable to obtain future hedges at effective prices consistent with those we have received to date and natural gas prices do not improve, our cash flows may be adversely impacted. Additionally, if development drilling costs increase significantly in the future, our hedged revenues may not be sufficient to cover our costs.***

To achieve more predictable cash flows and reduce our exposure to downward price fluctuations, as of March 31, 2013, we had entered into a number of hedge contracts for approximately 918 Bcfe of our projected natural gas and oil production through December 31, 2018. We are currently realizing a significant benefit from these hedge positions. For example, for the years ended December 31, 2011 and 2012, we received approximately \$117 million and \$271 million, respectively, in revenues pursuant to our hedges, which represented approximately 11% and 30%, respectively, of our total revenues (including revenues from discontinued operations) for such periods. Many of the hedge agreements that resulted in these realized gains for the years ended December 31, 2011 and 2012 were executed at times when spot and future prices were higher than prices that we are currently able to obtain in the futures market, and the price at which we have been able to hedge future production has decreased as a result. Therefore, we expect that this benefit will decline materially over the life of the hedges, which cover decreasing volumes at declining prices through December 2018. If we are unable to enter into new hedge contracts in the future at favorable pricing and for a sufficient amount of our production, our financial condition and results of operations could be materially adversely affected.

Additionally, since we hedge a significant part of our estimated future production, we have fixed a significant part of our future revenue stream. For example, for the years ended December 31, 2011 and 2012, approximately 73% and 81%, respectively, of our estimated future production (including



production from discontinued operations) was covered by our hedge contracts. If development drilling costs increase significantly because of inflation, increased demand for oilfield services, increased costs to comply with regulations governing our industry or other factors, future hedged revenues may not be sufficient to cover our costs.

***In certain circumstances we may have to purchase commodities on the open market or make cash payments under our hedging arrangements and these payments could be significant.***

If our production is less than the volume commitments under our hedging arrangements, or if natural gas or oil prices exceed the price at which we have hedged our commodities, we may be obligated to make cash payments to our hedge counterparties or purchase the volume difference at market prices, which could, in certain circumstances, be significant. As of March 31, 2013, we had entered into hedging contracts through December 31, 2018 covering a total of approximately 918 Bcfe of our projected natural gas and oil production at a weighted average price of \$4.81 per Mcfe. For the period from April 1, 2013 until December 31, 2013, we have hedged approximately 106 Bcfe of our projected natural gas and oil production at a weighted average price of \$4.64 per Mcfe. If we have to purchase additional commodities on the open market or post cash collateral to meet our obligations under such arrangements, our cash otherwise available for use in our operations would be reduced.

***Reserve estimates depend on many assumptions that may turn out to be inaccurate. Any material inaccuracies in our reserve estimates or underlying assumptions will materially affect the quantities and present value of our reserves.***

The process of estimating natural gas and oil reserves is complex. It requires interpretations of available technical data and many assumptions, including assumptions relating to current and future economic conditions and commodity prices. Any significant inaccuracies in these interpretations or assumptions could materially affect our estimated quantities and present value of our reserves.

In order to prepare our estimates, we must project production rates and timing of development expenditures. We must also analyze available geological, geophysical, production and engineering data. The extent, quality and reliability of this data can vary.

The process also requires economic assumptions about matters such as natural gas prices, drilling and operating expenses, capital expenditures, taxes and availability of funds.

Actual future production, natural gas prices, revenues, taxes, development expenditures, operating expenses and quantities of recoverable natural gas reserves will vary from our estimates. Any significant variance could materially affect the estimated quantities and present value of our reserves. In addition, we may adjust our reserve estimates to reflect production history, results of exploration and development, existing commodity prices and other factors, many of which are beyond our control.

You should not assume that the present value of future net revenues from our reserves is the current market value of our estimated natural gas reserves. We generally base the estimated discounted future net cash flows from our reserves on prices and costs on the date of the estimate. Actual future prices and costs may differ materially from those used in the present value estimate.

***Our identified potential well locations are scheduled out over many years, making them susceptible to uncertainties that could materially alter the occurrence or timing of their drilling. In addition, we may not be able to raise the substantial amount of capital that would be necessary to drill our potential well locations.***

Our management team has specifically identified and scheduled certain well locations as an estimation of our future multi-year drilling activities on our existing acreage. These well locations represent a significant part of our growth strategy. Our ability to drill and develop these locations depends on a number of uncertainties, including natural gas and oil prices, the availability and cost of

capital, drilling and production costs, availability of drilling services and equipment, drilling results, lease expirations, gathering system and pipeline transportation constraints, access to and availability of water sourcing and distribution systems, regulatory approvals and other factors. Because of these uncertain factors, we do not know if the numerous potential well locations we have identified will ever be drilled or if we will be able to produce natural gas or oil from these or any other potential well locations. In addition, unless production is established within the spacing units covering the undeveloped acres on which some of the potential locations are obtained, the leases for such acreage will expire. As such, our actual drilling activities may materially differ from those presently identified.

As of June 30, 2013, we had 4,576 identified potential horizontal well locations. As a result of the limitations described above, we may be unable to drill many of our potential well locations. In addition, we will require significant additional capital over a prolonged period in order to pursue the development of these locations, and we may not be able to raise or generate the capital required to do so. Any drilling activities we are able to conduct on these potential locations may not be successful or result in our ability to add additional proved reserves to our overall proved reserves or may result in a downward revision of our estimated proved reserves, which could have a material adverse effect on our future business and results of operations. For more information on our identified potential well locations, see "Business—Our Operations—Identification of Potential Well Locations."

***Approximately 94% of our net leasehold acreage is undeveloped, and that acreage may not ultimately be developed or become commercially productive, which could cause us to lose rights under our leases as well as have a material adverse effect on our oil and natural gas reserves and future production and, therefore, our future cash flow and income.***

Approximately 94% of our net leasehold acreage is undeveloped, or acreage on which wells have not been drilled or completed to a point that would permit the production of commercial quantities of oil and natural gas regardless of whether such acreage contains proved reserves. In addition, 48% and 80% of our natural gas leases related to our Marcellus and Utica acreage, respectively, require us to drill wells that are commercially productive, and if we are unsuccessful in drilling such wells, we could lose our rights under such leases. Our future oil and natural gas reserves and production and, therefore, our future cash flow and income are highly dependent on successfully developing our undeveloped leasehold acreage.

***Our producing properties are concentrated in the Appalachian Basin, making us vulnerable to risks associated with operating in one major geographic area.***

Our producing properties are geographically concentrated in the Appalachian Basin in West Virginia, Ohio and Pennsylvania. At June 30, 2013, all of our total estimated proved reserves were attributable to properties located in this area. As a result of this concentration, we may be disproportionately exposed to the impact of regional supply and demand factors, delays or interruptions of production from wells in this area caused by governmental regulation, processing or transportation capacity constraints, market limitations, water shortages or other drought related conditions or interruption of the processing or transportation of oil, natural gas or NGLs.

***Insufficient processing or takeaway capacity in the Appalachian Basin could cause significant fluctuations in our realized natural gas and NGL prices.***

The Appalachian Basin natural gas and NGL business environment has historically been characterized by periods during which production has surpassed local processing and takeaway capacity, resulting in substantial discounts in the price received. Although additional Appalachian Basin takeaway capacity has been added in 2012 and 2013, we do not believe the existing and expected capacity will be sufficient to keep pace with the increased production caused by accelerated drilling in the area. If we are unable to secure additional gathering, compression and processing capacity and long-term firm

takeaway capacity on major pipelines that are in existence or currently under construction in our core operating area to accommodate our growing production and to manage basis differentials, it could have a material adverse effect on our financial condition and results of operations.

***We may incur losses as a result of title defects in the properties in which we invest.***

It is our practice in acquiring oil and gas leases or interests not to incur the expense of retaining lawyers to examine the title to the mineral interest at the time of acquisition. Rather, we rely upon the judgment of oil and gas lease brokers or landmen who perform the fieldwork in examining records in the appropriate governmental office before attempting to acquire a lease in a specific mineral interest. Leases in the Appalachian Basin are particularly vulnerable to title deficiencies due the long history of land ownership in the area, resulting in extensive and complex chains of title. Additionally, there are claims against us alleging that certain acquired leases that are held by production are invalid due to production from the producing horizons being insufficient to hold title to the formation rights that we have purchased. The existence of a material title deficiency can render a lease worthless and can adversely affect our results of operations and financial condition. While we do typically obtain title opinions prior to commencing drilling operations on a lease or in a unit, the failure of title may not be discovered until after a well is drilled, in which case we may lose the lease and the right to produce all or a portion of the minerals under the property.

***The development of our estimated proved undeveloped reserves may take longer and may require higher levels of capital expenditures than we currently anticipate. Therefore, our estimated proved undeveloped reserves may not be ultimately developed or produced.***

At June 30, 2013, 77% of our total estimated proved reserves were classified as proved undeveloped. Our approximately 4.8 Tcfe of estimated proved undeveloped reserves will require an estimated \$4.6 billion of development capital over the next five years. Moreover, the development of probable and possible reserves will require additional capital expenditures and such reserves are less certain to be recovered than proved reserves. Development of these undeveloped reserves may take longer and require higher levels of capital expenditures than we currently anticipate. Delays in the development of our reserves, increases in costs to drill and develop such reserves, or decreases in commodity prices will reduce the PV-10 value of our estimated proved undeveloped reserves and future net revenues estimated for such reserves and may result in some projects becoming uneconomic. In addition, delays in the development of reserves could cause us to have to reclassify our proved undeveloped reserves as unproved reserves.

***If commodity prices decrease to a level such that our future undiscounted cash flows from our properties are less than their carrying value for a significant period of time, we will be required to take write-downs of the carrying values of our properties.***

Accounting rules require that we periodically review the carrying value of our properties for possible impairment. Based on specific market factors and circumstances at the time of prospective impairment reviews, and the continuing evaluation of development plans, production data, economics and other factors, we may be required to write down the carrying value of our properties. A writedown constitutes a non-cash charge to earnings. We may incur impairment charges in the future, which could have a material adverse effect on our results of operations for the periods in which such charges are taken.

***Unless we replace our reserves with new reserves and develop those reserves, our reserves and production will decline, which would adversely affect our future cash flows and results of operations.***

Producing natural gas reservoirs generally are characterized by declining production rates that vary depending upon reservoir characteristics and other factors. Unless we conduct successful ongoing

exploitation, development and exploration activities or continually acquire properties containing proved reserves, our proved reserves will decline as those reserves are produced. Our future natural gas reserves and production, and therefore our future cash flow and results of operations, are highly dependent on our success in efficiently developing and exploiting our current reserves and economically finding or acquiring additional recoverable reserves. We may not be able to develop, exploit, find or acquire sufficient additional reserves to replace our current and future production. If we are unable to replace our current and future production, the value of our reserves will decrease, and our business, financial condition and results of operations would be adversely affected.

***Conservation measures and technological advances could reduce demand for oil and natural gas.***

Fuel conservation measures, alternative fuel requirements, increasing consumer demand for alternatives to oil and natural gas, technological advances in fuel economy and energy generation devices could reduce demand for oil and natural gas. The impact of the changing demand for oil and gas services and products may have a material adverse effect on our business, financial condition, results of operations and cash flows.

***Our derivative activities could result in financial losses or could reduce our earnings.***

To achieve more predictable cash flows and reduce our exposure to adverse fluctuations in the prices of natural gas, we enter into derivative instrument contracts for a significant portion of our natural gas production, including fixed-price swaps. As of March 31, 2013, we had entered into hedging contracts through December 31, 2018 covering a total of approximately 918 Bcfe of our projected natural gas and oil production at a weighted average price of \$4.81 per Mcfe. For the period from April 1, 2013 until December 31, 2013, we have hedged approximately 106 Bcfe of our projected natural gas and oil production at a weighted average price of \$4.64 per Mcfe. Accordingly, our earnings may fluctuate significantly as a result of changes in fair value of our derivative instruments.

Derivative instruments also expose us to the risk of financial loss in some circumstances, including when:

- production is less than the volume covered by the derivative instruments;
- the counterparty to the derivative instrument defaults on its contractual obligations;
- there is an increase in the differential between the underlying price in the derivative instrument and actual prices received; or
- there are issues with regard to legal enforceability of such instruments.

The use of derivatives may, in some cases, require the posting of cash collateral with counterparties. If we enter into derivative instruments that require cash collateral and commodity prices or interest rates change in a manner adverse to us, our cash otherwise available for use in our operations would be reduced which could limit our ability to make future capital expenditures and make payments on our indebtedness, and which could also limit the size of our borrowing base. Future collateral requirements will depend on arrangements with our counterparties, highly volatile oil and natural gas prices and interest rates.

As of March 31, 2013, the estimated fair value of our commodity derivative contracts was approximately \$412 million. Any default by the counterparties to these derivative contracts when they become due would have a material adverse effect on our financial condition and results of operations. The fair value of our commodity derivative contracts of approximately \$412 million at March 31, 2013 includes the following values by bank counterparty: BNP Paribas—\$114 million; Credit Suisse—\$105 million; Wells Fargo—\$64 million; JP Morgan—\$75 million; Barclays—\$46 million; Deutsche Bank—\$8 million; Union Bank—\$1 million; Citigroup—\$(2) million; Toronto Dominion

Bank—\$(2) million; and KeyBank—\$(1) million. Additionally, contracts with Dominion Field Services account for \$4 million of the fair value. The credit ratings of certain of these banks were downgraded in 2011 because of the sovereign debt crisis in Europe.

In addition, derivative arrangements could limit the benefit we would receive from increases in the prices for natural gas, which could also have an adverse effect on our financial condition.

***Our hedging transactions expose us to counterparty credit risk.***

Our hedging transactions expose us to risk of financial loss if a counterparty fails to perform under a derivative contract. Disruptions in the financial markets could lead to sudden decreases in a counterparty's liquidity, which could make them unable to perform under the terms of the derivative contract and we may not be able to realize the benefit of the derivative contract.

***The inability of our significant customers to meet their obligations to us may adversely affect our financial results.***

In addition to credit risk related to receivables from commodity derivative contracts, our principal exposures to credit risk are through joint interest receivables (\$6 million at December 31, 2012) and the sale of our natural gas production (\$47 million in receivables at December 31, 2012), which we market to energy marketing companies, refineries and affiliates. Joint interest receivables arise from billing entities who own partial interest in the wells we operate. These entities participate in our wells primarily based on their ownership in leased properties on which we wish to drill. We can do very little to choose who participates in our wells. We are also subject to credit risk due to concentration of our natural gas receivables with several significant customers. The largest purchaser of our natural gas during the twelve months ended December 31, 2012 purchased approximately 23% of our operated production. We do not require our customers to post collateral. The inability or failure of our significant customers to meet their obligations to us or their insolvency or liquidation may adversely affect our financial results.

***Our operations may be exposed to significant delays, costs and liabilities as a result of environmental and occupational health and safety requirements applicable to our business activities.***

We may incur significant delays, costs and liabilities as a result of environmental and occupational health and safety requirements applicable to our exploration, development and production activities. These delays, costs and liabilities could arise under a wide range of federal, regional, state and local laws and regulations relating to protection of the environment and worker health and safety, including regulations and enforcement policies that have tended to become increasingly strict over time resulting in longer waiting periods to receive permits and other regulatory approvals. Failure to comply with these laws and regulations may result in the assessment of administrative, civil and criminal penalties, imposition of cleanup and site restoration costs and liens, and, in some instances, issuance of orders or injunctions limiting or requiring discontinuation of certain operations.

For example, in March 2011, we received orders for compliance from federal regulatory agencies, including the U. S. Environmental Protection Agency, or the EPA, relating to certain of our activities in West Virginia. The orders allege that certain of our operations at several well sites are in non-compliance with certain environmental regulations, such as unpermitted discharges of fill material into wetlands or waters of the United States that are potentially in violation of the Clean Water Act. We have responded to all pending orders and are actively cooperating with the relevant agencies. No fine or penalty relating to these matters has been proposed at this time, but we believe that these actions will result in monetary sanctions exceeding \$100,000. In addition, we expect to incur additional costs to remediate these well locations in order to bring them into compliance with applicable environmental laws and regulations. We have not, however, been required to suspend our operations at these locations

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to date and our management team does not expect these matters to have a material adverse effect on our financial condition, results of operations or cash flows.

Strict, joint and several liabilities may be imposed under certain environmental laws, which could cause us to become liable for the conduct of others or for consequences of our own actions that were in compliance with all applicable laws at the time those actions were taken. In addition, claims for damages to persons or property, including natural resources, may result from the environmental and worker health and safety impacts of our operations. We have been named from time to time as a defendant in litigation related to such matters. For example, we have been recently named as the defendant in separate lawsuits in Colorado, West Virginia and Pennsylvania in which the plaintiffs have alleged that our oil and natural gas activities exposed them to hazardous substances and damaged their properties. The plaintiffs have requested unspecified damages and other injunctive or equitable relief. We are not yet able to estimate what our aggregate exposure for monetary or other damages resulting from these or other similar claims might be. Also, new laws, regulations or enforcement policies could be more stringent and impose unforeseen liabilities or significantly increase compliance costs. If we were not able to recover the resulting costs through insurance or increased revenues, our business, financial condition or results of operations could be adversely affected.

***We may incur substantial losses and be subject to substantial liability claims as a result of our operations. Additionally, we may not be insured for, or our insurance may be inadequate to protect us against, these risks.***

We are not insured against all risks. Losses and liabilities arising from uninsured and underinsured events could materially and adversely affect our business, financial condition or results of operations.

Our natural gas exploration and production activities are subject to all of the operating risks associated with drilling for and producing natural gas, including the possibility of:

- environmental hazards, such as uncontrollable releases of oil, natural gas, brine, well fluids, toxic gas or other pollution into the environment, including groundwater, air and shoreline contamination;
- abnormally pressured formations;
- mechanical difficulties, such as stuck oilfield drilling and service tools and casing collapse;
- fires, explosions and ruptures of pipelines;
- personal injuries and death;
- natural disasters; and
- terrorist attacks targeting natural gas and oil related facilities and infrastructure.

Any of these risks could adversely affect our ability to conduct operations or result in substantial loss to us as a result of claims for:

- injury or loss of life;
- damage to and destruction of property, natural resources and equipment;
- pollution and other environmental damage;
- regulatory investigations and penalties;
- suspension of our operations; and
- repair and remediation costs.

We may elect not to obtain insurance for any or all of these risks if we believe that the cost of available insurance is excessive relative to the risks presented. In addition, pollution and environmental risks generally are not fully insurable. The occurrence of an event that is not fully covered by insurance could have a material adverse effect on our business, financial condition and results of operations.

***Properties that we decide to drill may not yield natural gas or oil in commercially viable quantities.***

Properties that we decide to drill that do not yield natural gas or oil in commercially viable quantities will adversely affect our results of operations and financial condition. There is no way to predict in advance of drilling and testing whether any particular prospect will yield natural gas or oil in sufficient quantities to recover drilling or completion costs or to be economically viable. The use of micro-seismic data and other technologies and the study of producing fields in the same area will not enable us to know conclusively prior to drilling whether natural gas or oil will be present or, if present, whether natural gas or oil will be present in commercial quantities. We cannot assure you that the analogies we draw from available data from other wells, more fully explored prospects or producing fields will be applicable to our drilling prospects. Further, our drilling operations may be curtailed, delayed or cancelled as a result of numerous factors, including:

- unexpected drilling conditions;
- title problems;
- pressure or lost circulation in formations;
- equipment failure or accidents;
- adverse weather conditions;
- compliance with environmental and other governmental or contractual requirements; and
- increase in the cost of, shortages or delays in the availability of, electricity, supplies, materials, drilling or workover rigs, equipment and services.

***We may be unable to make attractive acquisitions or successfully integrate acquired businesses, and any inability to do so may disrupt our business and hinder our ability to grow.***

In the future we may make acquisitions of businesses that complement or expand our current business. We may not be able to identify attractive acquisition opportunities. Even if we do identify attractive acquisition opportunities, we may not be able to complete the acquisition or do so on commercially acceptable terms.

The success of any completed acquisition will depend on our ability to integrate effectively the acquired business into our existing operations. The process of integrating acquired businesses may involve unforeseen difficulties and may require a disproportionate amount of our managerial and financial resources. In addition, possible future acquisitions may be larger and for purchase prices significantly higher than those paid for earlier acquisitions. No assurance can be given that we will be able to identify additional suitable acquisition opportunities, negotiate acceptable terms, obtain financing for acquisitions on acceptable terms or successfully acquire identified targets. Our failure to achieve consolidation savings, to integrate the acquired businesses and assets into our existing operations successfully or to minimize any unforeseen operational difficulties could have a material adverse effect on our financial condition and results of operations.

In addition, our credit facility imposes and the indentures governing our senior notes impose certain limitations on our ability to enter into mergers or combination transactions. Our credit facility and the indentures governing our senior notes also limit our ability to incur certain indebtedness, which could indirectly limit our ability to engage in acquisitions of businesses.

***Market conditions or operational impediments may hinder our access to natural gas and oil markets or delay our production.***

Market conditions or the unavailability of satisfactory natural gas and oil transportation arrangements may hinder our access to natural gas and oil markets or delay our production. The

availability of a ready market for our natural gas and oil production depends on a number of factors, including the demand for and supply of natural gas and oil and the proximity of reserves to pipelines and terminal facilities. Our ability to market our production depends in substantial part on the availability and capacity of gathering systems, pipelines and processing facilities owned and operated by third parties. Our failure to obtain such services on acceptable terms could materially harm our business. We may be required to shut in wells due to lack of a market or inadequacy or unavailability of natural gas and oil pipeline or gathering system capacity. In addition, if natural gas or oil quality specifications for the third-party natural gas or oil pipelines with which we connect change so as to restrict our ability to transport natural gas or oil, our access to natural gas and oil markets could be impeded. If our production becomes shut in for any of these or other reasons, we would be unable to realize revenue from those wells until other arrangements were made to deliver the products to market.

***We are subject to complex federal, state, local and other laws and regulations that could adversely affect the cost, manner or feasibility of conducting our operations or expose us to significant liabilities.***

Our natural gas exploration, production and transportation operations are subject to complex and stringent laws and regulations. In order to conduct our operations in compliance with these laws and regulations, we must obtain and maintain numerous permits, approvals and certificates from various federal, state and local governmental authorities. We may incur substantial costs in order to maintain compliance with these existing laws and regulations. In addition, our costs of compliance may increase if existing laws and regulations are revised or reinterpreted, or if new laws and regulations become applicable to our operations. Such costs could have a material adverse effect on our business, financial condition and results of operations.

Our business is subject to federal, state and local laws and regulations as interpreted and enforced by governmental authorities possessing jurisdiction over various aspects of the exploration for, and the production and transportation of, natural gas. Failure to comply with such laws and regulations, including any evolving interpretation and enforcement by governmental authorities, could have a material adverse effect on our business, financial condition and results of operations.

Changes to existing or new regulations may unfavorably impact us, could result in increased operating costs and have a material adverse effect on our financial condition and results of operations. Such potential regulations could increase our operating costs, reduce our liquidity, delay or halt our operations or otherwise alter the way we conduct our business, which could in turn have a material adverse effect on our financial condition, results of operations and cash flows.

***The unavailability or high cost of additional drilling rigs, equipment, supplies, personnel and oilfield services could adversely affect our ability to execute our exploration and development plans within our budget and on a timely basis.***

The demand for qualified and experienced field personnel to drill wells and conduct field operations, geologists, geophysicists, engineers and other professionals in the oil and natural gas industry can fluctuate significantly, often in correlation with natural gas and oil prices, causing periodic shortages. Historically, there have been shortages of drilling and workover rigs, pipe and other equipment as demand for rigs and equipment has increased along with the number of wells being drilled. We cannot predict whether these conditions will exist in the future and, if so, what their timing and duration will be. Such shortages could delay or cause us to incur significant expenditures that are not provided for in our capital budget, which could have a material adverse effect on our business, financial condition or results of operations.



***A change in the jurisdictional characterization of some of our assets by federal, state or local regulatory agencies or a change in policy by those agencies may result in increased regulation of our assets, which may cause our revenues to decline and operating expenses to increase.***

Section 1(b) of the Natural Gas Act of 1938, or NGA, exempts natural gas gathering facilities from regulation by the Federal Energy Regulatory Commission, or FERC, as a natural gas company under the NGA. We believe that the natural gas pipelines in our gathering systems meet the traditional tests FERC has used to establish a pipeline's status as a gatherer not subject to regulation as a natural gas company. However, the distinction between FERC-regulated transmission services and federally unregulated gathering services is the subject of ongoing litigation, so the classification and regulation of our gathering facilities are subject to change based on future determinations by FERC, the courts or Congress.

***Should we fail to comply with all applicable FERC administered statutes, rules, regulations and orders, we could be subject to substantial penalties and fines.***

Under the Domenici-Barton Energy Policy Act of 2005, FERC has civil penalty authority under the NGA to impose penalties for current violations of up to \$1 million per day for each violation and disgorgement of profits associated with any violation. While our systems have not been regulated by FERC as a natural gas company under the NGA, FERC has adopted regulations that may subject certain of our otherwise non-FERC jurisdictional facilities to FERC annual reporting and daily scheduled flow and capacity posting requirements. Additional rules and legislation pertaining to those and other matters may be considered or adopted by FERC from time to time. Failure to comply with those regulations in the future could subject us to civil penalty liability.

***Climate change laws and regulations restricting emissions of "greenhouse gases" could result in increased operating costs and reduced demand for the oil and natural gas that we produce while potential physical effects of climate change could disrupt our production and cause us to incur significant costs in preparing for or responding to those effects.***

In response to findings that emissions of carbon dioxide, methane and other greenhouse gases, or GHGs, present an endangerment to public health and the environment, the EPA has adopted regulations under existing provisions of the federal Clean Air Act that, among other things, establish Prevention of Significant Deterioration, or PSD, construction and Title V operating permit reviews for certain large stationary sources that are potential major sources of GHG emissions. Facilities required to obtain PSD permits for their GHG emissions also will be required to meet "best available control technology" standards that will be established by the states or, in some cases, by the EPA on a case-by-case basis. These EPA rulemakings could adversely affect our operations and restrict or delay our ability to obtain air permits for new or modified sources. In addition, the EPA has adopted rules requiring the monitoring and reporting of GHG emissions from specified onshore and offshore oil and gas production sources in the United States on an annual basis, which include certain of our operations. We are monitoring GHG emissions from our operations in accordance with the GHG emissions reporting rule and believe that our monitoring activities are in substantial compliance with applicable reporting obligations. While Congress has from time to time considered legislation to reduce emissions of GHGs, there has not been significant activity in the form of adopted legislation to reduce GHG emissions at the federal level in recent years. In the absence of such federal climate legislation, a number of state and regional efforts have emerged that are aimed at tracking and/or reducing GHG emissions by means of cap and trade programs that typically require major sources of GHG emissions, such as electric power plants, to acquire and surrender emission allowances in return for emitting those GHGs. If Congress undertakes comprehensive tax reform in the coming year, it is possible that such reform may include a carbon tax, which could impose additional direct costs on operations and reduce demand for refined products. Although it is not possible at this time to predict how legislation or new

regulations that may be adopted to address GHG emissions would impact our business, any such future laws and regulations imposing reporting obligations on, or limiting emissions of GHGs from, our equipment and operations could require us to incur costs to reduce emissions of GHGs associated with our operations. Substantial limitations on GHG emissions could adversely affect demand for the oil and natural gas we produce. Finally, it should be noted that some scientists have concluded that increasing concentrations of GHGs in the Earth's atmosphere may produce climate changes that have significant physical effects, such as increased frequency and severity of storms, floods and other climatic events; if any such effects were to occur, they could have an adverse effect on our exploration and production operations.

***Federal, state and local legislative and regulatory initiatives relating to hydraulic fracturing as well as governmental reviews of such activities could result in increased costs and additional operating restrictions or delays in the completion of oil and natural gas wells and adversely affect our production.***

Hydraulic fracturing is an important and common practice that is used to stimulate production of natural gas and/or oil from dense subsurface rock formations. The hydraulic fracturing process involves the injection of water, sand, and chemicals under pressure into targeted subsurface formations to fracture the surrounding rock and stimulate production. We regularly use hydraulic fracturing as part of our operations. Hydraulic fracturing typically is regulated by state oil and natural gas commissions, but the EPA has asserted federal regulatory authority pursuant to the federal Safe Drinking Water Act, or SDWA, over certain hydraulic fracturing activities involving the use of diesel fuels and published draft permitting guidance in May 2012 addressing the performance of such activities using diesel fuels. In November 2011, the EPA announced its intent to develop and issue regulations under the Toxic Substances Control Act to require companies to disclose information regarding the chemicals used in hydraulic fracturing and the agency currently plans to issue a Notice of Proposed Rulemaking that would seek public input on the design and scope of such disclosure regulations. In addition, Congress has from time to time considered legislation to provide for federal regulation of hydraulic fracturing under the SDWA and to require disclosure of the chemicals used in the hydraulic fracturing process. At the state level, several states have adopted or are considering legal requirements that could impose more stringent permitting, disclosure, and well construction requirements on hydraulic fracturing activities. Local government also may seek to adopt ordinances within their jurisdictions regulating the time, place and manner of drilling activities in general or hydraulic fracturing activities in particular. We believe that we follow applicable standard industry practices and legal requirements for groundwater protection in our hydraulic fracturing activities. Nonetheless, if new or more stringent federal, state, or local legal restrictions relating to the hydraulic fracturing process are adopted in areas where we operate, we could incur potentially significant added costs to comply with such requirements, experience delays or curtailment in the pursuit of exploration, development, or production activities, and perhaps even be precluded from drilling wells.

In addition, certain governmental reviews have been conducted or are underway that focus on environmental aspects of hydraulic fracturing practices. The White House Council on Environmental Quality is coordinating an administration-wide review of hydraulic fracturing practices. The EPA has commenced a study of the potential environmental effects of hydraulic fracturing on drinking water and groundwater, with a first progress report outlining work currently underway by the agency released on December 21, 2012 and a final report drawing conclusions about the potential impacts of hydraulic fracturing on drinking water resources expected to be available for public comment and peer review by 2014. Moreover, the EPA is developing effluent limitations for the treatment and discharge of wastewater resulting from hydraulic fracturing activities and plans to propose these standards by 2014. In addition, the U.S. Department of the Interior published a revised proposed rule on May 24, 2013 that would implement updated requirements for hydraulic fracturing activities on federal lands, including new requirements relating to public disclosure, well bore integrity and handling of flowback water. Other governmental agencies, including the U.S. Department of Energy, have evaluated or are

evaluating various other aspects of hydraulic fracturing. These ongoing or proposed studies could spur initiatives to further regulate hydraulic fracturing under the SDWA or other regulatory mechanisms, and could ultimately make it more difficult or costly for us to perform fracturing and increase our costs of compliance and doing business.

***Competition in the natural gas industry is intense, making it more difficult for us to acquire properties, market natural gas and secure trained personnel.***

Our ability to acquire additional prospects and to find and develop reserves in the future will depend on our ability to evaluate and select suitable properties and to consummate transactions in a highly competitive environment for acquiring properties, marketing natural gas and securing trained personnel. Also, there is substantial competition for capital available for investment in the oil and natural gas industry. Many of our competitors possess and employ financial, technical and personnel resources substantially greater than ours. Those companies may be able to pay more for productive natural gas properties and exploratory prospects and to evaluate, bid for and purchase a greater number of properties and prospects than our financial or personnel resources permit. In addition, other companies may be able to offer better compensation packages to attract and retain qualified personnel than we are able to offer. The cost to attract and retain qualified personnel has increased over the past three years due to competition and may increase substantially in the future. We may not be able to compete successfully in the future in acquiring prospective reserves, developing reserves, marketing hydrocarbons, attracting and retaining quality personnel and raising additional capital, which could have a material adverse effect on our business.

***The loss of senior management or technical personnel could adversely affect operations.***

We depend on the services of our senior management and technical personnel. We do not maintain, nor do we plan to obtain, any insurance against the loss of any of these individuals. The loss of the services of our senior management or technical personnel, including Paul M. Rady, our Chairman and Chief Executive Officer, and Glen C. Warren, Jr., our President and Chief Financial Officer, could have a material adverse effect on our business, financial condition and results of operations.

***Seasonal weather conditions and regulations adversely affect our ability to conduct drilling activities in some of the areas where we operate.***

Natural gas operations in our operating areas can be adversely affected by seasonal weather conditions and regulations designed to protect various wildlife. This limits our ability to operate in those areas and can intensify competition during those months for drilling rigs, oilfield equipment, services, supplies and qualified personnel, which may lead to periodic shortages. These constraints and the resulting shortages or high costs could delay our operations and materially increase our operating and capital costs.

***We have been an early entrant into new or emerging plays. As a result, our drilling results in these areas are uncertain, and the value of our undeveloped acreage will decline if drilling results are unsuccessful.***

While our costs to acquire undeveloped acreage in new or emerging plays have generally been less than those of later entrants into a developing play, our drilling results in these areas are more uncertain than drilling results in areas that are developed and producing. Since new or emerging plays have limited or no production history, we are unable to use past drilling results in those areas to help predict our future drilling results. As a result, our cost of drilling, completing and operating wells in these areas may be higher than initially expected, and the value of our undeveloped acreage will decline if drilling results are unsuccessful.

***Increases in interest rates could adversely affect our business.***

Our business and operating results can be harmed by factors such as the availability, terms of and cost of capital, increases in interest rates or a reduction in credit rating. These changes could cause our cost of doing business to increase, limit our ability to pursue acquisition opportunities, reduce cash flow used for drilling and place us at a competitive disadvantage. For example, as of March 31, 2013, outstanding borrowings and letters of credit under our credit facility were approximately \$436 million, and the impact of a 1.0% increase in interest rates on this amount of indebtedness would result in increased interest expense for that period of approximately \$0.7 million and a corresponding decrease in our net income before the effects of increased interest rates on the value of our interest rate swap contracts and income taxes. In addition, an increase in interest rates could negatively impact the valuation that our midstream business would receive in an initial public offering as a master limited partnership. Recent and continuing disruptions and volatility in the global financial markets may lead to a contraction in credit availability impacting our ability to finance our operations. We require continued access to capital. A significant reduction in cash flows from operations or the availability of credit could materially and adversely affect our ability to achieve our planned growth and operating results.

***We may be subject to risks in connection with acquisitions of properties.***

The successful acquisition of producing properties requires an assessment of several factors, including:

- recoverable reserves;
- future natural gas prices and their applicable differentials;
- operating costs; and
- potential environmental and other liabilities.

The accuracy of these assessments is inherently uncertain. In connection with these assessments, we perform a review of the subject properties that we believe to be generally consistent with industry practices. Our review will not reveal all existing or potential problems nor will it permit us to become sufficiently familiar with the properties to fully assess their deficiencies and capabilities. Inspections may not always be performed on every well, and environmental problems, such as groundwater contamination, are not necessarily observable even when an inspection is undertaken. Even when problems are identified, the seller may be unwilling or unable to provide effective contractual protection against all or part of the problems. We often are not entitled to contractual indemnification for environmental liabilities and acquire properties on an "as is" basis.

***Certain federal income tax deductions currently available with respect to natural gas and oil exploration and development may be eliminated, and additional state taxes on natural gas extraction may be imposed, as a result of future legislation.***

The Fiscal Year 2013 Budget proposed by the President recommends the elimination of certain key U.S. federal income tax incentives currently available to oil and gas exploration and production companies, and legislation has been introduced in Congress that would implement many of these proposals. Such changes include, but are not limited to, (i) the repeal of the percentage depletion allowance for oil and gas properties; (ii) the elimination of current deductions for intangible drilling and development costs; (iii) the elimination of the deduction for certain U.S. production activities for oil and gas production; and (iv) an extension of the amortization period for certain geological and geophysical expenditures. It is unclear, however, whether any such changes will be enacted or how soon such changes could be effective.

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The passage of this legislation or any other similar change in U.S. federal income tax law could eliminate or postpone certain tax deductions that are currently available with respect to natural gas and oil exploration and development, and any such change could negatively affect our financial condition and results of operations.

In February 2013, the governor of the state of Ohio proposed a plan to enact new severance taxes in fiscal 2014 and 2015. However, the Ohio State Senate did not include a severance tax increase in the version of the budget bill that it passed on June 7, 2013. The possibility remains that the severance tax increase on horizontal wells will resurface during compromise talks on the budget.

### **Risks Related to the Offering and our Common Stock**

***The requirements of being a public company, including compliance with the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and the requirements of the Sarbanes-Oxley Act, may strain our resources, increase our costs and distract management, and we may be unable to comply with these requirements in a timely or cost-effective manner.***

As a public company, we will need to comply with new laws, regulations and requirements, certain corporate governance provisions of the Sarbanes-Oxley Act of 2002, related regulations of the SEC and the requirements of the NYSE, with which we are not required to comply as a private company. Complying with these statutes, regulations and requirements will occupy a significant amount of time of our board of directors and management and will significantly increase our costs and expenses. We will need to:

- institute a more comprehensive compliance function;
- comply with rules promulgated by the NYSE;
- continue to prepare and distribute periodic public reports in compliance with our obligations under the federal securities laws;
- establish new internal policies, such as those relating to insider trading; and
- involve and retain to a greater degree outside counsel and accountants in the above activities.

Furthermore, while we generally must comply with Section 404 of the Sarbanes Oxley Act of 2002 for our fiscal year ended December 31, 2013, we are not required to have our independent registered public accounting firm attest to the effectiveness of our internal controls until our first annual report subsequent to our ceasing to be an "emerging growth company" within the meaning of Section 2(a)(19) of the Securities Act. Accordingly, we may not be required to have our independent registered public accounting firm attest to the effectiveness of our internal controls until as late as our annual report for the fiscal year ending December 31, 2018. Once it is required to do so, our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our controls are documented, designed, operated or reviewed. Compliance with these requirements may strain our resources, increase our costs and distract management; and we may be unable to comply with these requirements in a timely or cost-effective manner.

***The initial public offering price of our common stock may not be indicative of the market price of our common stock after this offering. In addition, an active, liquid and orderly trading market for our common stock may not develop or be maintained, and our stock price may be volatile.***

Prior to this offering, our common stock was not traded on any market. An active, liquid and orderly trading market for our common stock may not develop or be maintained after this offering. Active, liquid and orderly trading markets usually result in less price volatility and more efficiency in carrying out investors' purchase and sale orders. The market price of our common stock could vary significantly as a result of a number of factors, some of which are beyond our control. In the event of a

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drop in the market price of our common stock, you could lose a substantial part or all of your investment in our common stock. The initial public offering price will be negotiated between us, the selling stockholder and representatives of the underwriters, based on numerous factors which we discuss in "Underwriting (Conflicts of Interest)," and may not be indicative of the market price of our common stock after this offering. Consequently, you may not be able to sell shares of our common stock at prices equal to or greater than the price paid by you in this offering.

The following factors could affect our stock price:

- our operating and financial performance and drilling locations, including reserve estimates;
- quarterly variations in the rate of growth of our financial indicators, such as net income per share, net income and revenues;
- strategic actions by our competitors;
- changes in revenue or earnings estimates, or changes in recommendations or withdrawal of research coverage, by equity research analysts;
- speculation in the press or investment community;
- sales of our common stock by us, the selling stockholder or other stockholders, or the perception that such sales may occur;
- changes in accounting principles;
- additions or departures of key management personnel;
- actions by our stockholders;
- general market conditions, including fluctuations in commodity prices; and
- domestic and international economic, legal and regulatory factors unrelated to our performance.

The stock markets in general have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. These broad market fluctuations may adversely affect the trading price of our common stock. Securities class action litigation has often been instituted against companies following periods of volatility in the overall market and in the market price of a company's securities. Such litigation, if instituted against us, could result in very substantial costs, divert our management's attention and resources and harm our business, operating results and financial condition.

### ***Antero Investment will hold a majority of our outstanding common stock.***

Immediately following the completion of this offering, Antero Investment will hold approximately % of our common stock (or % if the underwriters fully exercise their option to purchase additional shares of common stock). Accordingly, Antero Investment will have the ability to elect all of the members of our board of directors and thereby control our management and affairs. In addition, Antero Investment will be able to determine the outcome of all matters requiring stockholder approval, including mergers, amendments to our certificate of incorporation and other material transactions and will be able to cause or prevent a change in control of our company that could deprive our stockholders of an opportunity to receive a premium for their common stock as part of a sale of our company. The existence of significant stockholders may also have the effect of deterring hostile takeovers, delaying or preventing changes in control or changes in management, or limiting the ability of our other stockholders to approve transactions that they may deem to be in the best interests of our company. So long as Antero Investment continues to own a significant amount of our common stock, even if such amount represents less than 50% of the aggregate voting power, it will continue to be able

to strongly influence all matters requiring stockholder approval, regardless of whether or not other stockholders believe that a potential transaction is in their own best interests.

In addition, the limited liability company agreement of Antero Investment will provide that Antero Investment and its members will agree to vote the shares of our common stock held by Antero Investment in favor of the election of the five directors of Antero Investment to our board. See "Corporate Reorganization—Limited Liability Company Agreement of Antero Investment."

***Antero Investment will own a special membership interest in Antero Midstream that will provide Antero Investment with certain rights, including the right to cause an initial public offering of Antero Midstream and to prohibit our ability to sell, transfer or otherwise dispose of any portion of our midstream business or Antero Midstream without Antero Investment's consent.***

In connection with the completion of this offering, we intend to contribute our midstream business to Antero Midstream, a newly formed limited liability company. We will own 100% of the economic interests and initially control Antero Midstream, but Antero Investment, which includes members of our management and our Sponsors, will own a special membership interest in Antero Midstream that will provide Antero Investment with certain rights, including the right to cause an initial public offering of Antero Midstream and to prohibit our ability to sell, transfer or otherwise dispose of any portion of our midstream business or Antero Midstream without Antero Investment's consent. As a result, we may not be able to manage our midstream business in a manner that will maximize its value to our stockholders. For example, we may not be able to pursue strategic dispositions of our midstream assets or determine whether to pursue an initial public offering of our midstream business when we believe it to be in the best interest of our shareholders. Following the completion of an initial public offering of Antero Midstream, Antero Investment's interest in Antero Midstream will automatically convert into a non-economic general partner interest. As a result, Antero Investment will control our current and future midstream business and may operate this business in a manner that is inconsistent with the interests of our shareholders, because those decisions will be controlled by Antero Investment and not by us. In addition, following an initial public offering of Antero Midstream, Antero Investment will have the right to receive an increasing percentage of the master limited partnership's quarterly cash distributions in excess of specified target distribution levels. As a result, we may not receive the full economic benefit of our midstream business after an initial public offering of Antero Midstream. See "Certain Relationships and Related Party Transactions—Antero Midstream—Special Membership Interest."

***Our amended and restated certificate of incorporation and amended and restated bylaws, as well as Delaware law, contain provisions that could discourage acquisition bids or merger proposals, which may adversely affect the market price of our common stock.***

Our amended and restated certificate of incorporation authorizes our board of directors to issue preferred stock without stockholder approval. If our board of directors elects to issue preferred stock, it could be more difficult for a third party to acquire us. In addition, some provisions of our amended and restated certificate of incorporation and amended and restated bylaws could make it more difficult for a third party to acquire control of us, even if the change of control would be beneficial to our stockholders, including:

- limitations on the removal of directors;
- limitations on the ability of our stockholders to call special meetings; and
- establishing advance notice provisions for stockholder proposals and nominations for elections to the board of directors to be acted upon at meetings of stockholders.



***Investors in this offering will experience immediate and substantial dilution of \$      per share.***

Based on an assumed initial public offering price of \$      per share, purchasers of our common stock in this offering will experience an immediate and substantial dilution of \$      per share in the as adjusted net tangible book value per share of common stock from the initial public offering price, and our as adjusted net tangible book value as of March 31, 2013 after giving effect to this offering would be \$      per share. This dilution is due in large part to earlier investors having paid substantially less than the initial public offering price when they purchased their shares. See "Dilution."

***We may invest or spend the proceeds of this offering in ways with which you may not agree or in ways which may not yield a return.***

A portion of the net proceeds from this offering are expected to be used for general corporate purposes, including working capital. Our management will have considerable discretion in the application of the net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. The net proceeds may be used for corporate purposes that do not increase our operating results or market value. Until the net proceeds are used, they may be placed in investments that do not produce significant income or that may lose value.

***We do not intend to pay dividends on our common stock, and our credit facility and the indentures governing our senior notes place certain restrictions on our ability to do so. Consequently, your only opportunity to achieve a return on your investment is if the price of our common stock appreciates.***

We do not plan to declare dividends on shares of our common stock in the foreseeable future. Additionally, our credit facility and the indentures governing our senior notes place certain restrictions on our ability to pay cash dividends. Consequently, your only opportunity to achieve a return on your investment in us will be if you sell your common stock at a price greater than you paid for it. There is no guarantee that the price of our common stock that will prevail in the market will ever exceed the price that you pay in this offering.

***Future sales of our common stock in the public market could reduce our stock price, and any additional capital raised by us through the sale of equity or convertible securities may dilute your ownership in us.***

We may sell additional shares of common stock in subsequent public offerings. We may also issue additional shares of common stock or convertible securities. After the completion of this offering, we will have      outstanding shares of common stock. This number includes      shares that we are selling in this offering and      shares that Antero Investment may sell in this offering if the underwriters' option to purchase additional shares is fully exercised, which may be resold immediately in the public market. Following the completion of this offering, and assuming full exercise of the underwriters' option to purchase additional shares, Antero Investment will own      shares, or approximately      % of our total outstanding shares, all of which are restricted from immediate resale under the federal securities laws and are subject to the lock-up agreements between the selling stockholder and the underwriters described in "Underwriting (Conflicts of Interest)," but may be sold into the market in the future.

Prior to the completion of this offering, we intend to file a registration statement with the SEC on Form S-8 providing for the registration of      shares of our common stock issued or reserved for issuance under our stock incentive plan. Subject to the satisfaction of vesting conditions and the expiration of lock-up agreements, shares registered under the registration statement on Form S-8 will be available for resale immediately in the public market without restriction.

We cannot predict the size of future issuances of our common stock or securities convertible into common stock or the effect, if any, that future issuances and sales of shares of our common stock will



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have on the market price of our common stock. Sales of substantial amounts of our common stock (including shares issued in connection with an acquisition), or the perception that such sales could occur, may adversely affect prevailing market prices of our common stock.

***The underwriters of this offering may waive or release parties to the lock-up agreements entered into in connection with this offering, which could adversely affect the price of our common stock.***

Antero Investment and our directors and executive officers have entered into lock-up agreements with respect to their common stock, pursuant to which they are subject to certain resale restrictions for a period of 180 days following the effectiveness date of the registration statement of which this prospectus forms a part. Barclays Capital Inc., at any time and without notice, may release all or any portion of the common stock subject to the foregoing lock-up agreements. If the restrictions under the lock-up agreements are waived, then common stock will be available for sale into the public markets, which could cause the market price of our common stock to decline and impair our ability to raise capital.

***We expect to be a "controlled company" within the meaning of the NYSE rules and, as a result, will qualify for and could rely on exemptions from certain corporate governance requirements.***

Upon completion of this offering, Antero Investment will control a majority of the combined voting power of all classes of our outstanding voting stock, and we expect to be a "controlled company" within the meaning of the NYSE corporate governance standards. Under the NYSE rules, a company of which more than 50% of the voting power is held by another person or group of persons acting together is a "controlled company" and may elect not to comply with certain NYSE corporate governance requirements, including the requirements that:

- a majority of the board of directors consist of independent directors;
- the nominating and corporate governance committee be composed entirely of independent directors with a written charter addressing the committee's purpose and responsibilities;
- the compensation committee be composed entirely of independent directors with a written charter addressing the committee's purpose and responsibilities; and
- there be an annual performance evaluation of the nominating and corporate governance and compensation committees.

These requirements will not apply to us as long as we remain a "controlled company." Following this offering, we may utilize some or all of these exemptions. Accordingly, you may not have the same protections afforded to stockholders of companies that are subject to all of the corporate governance requirements of the NYSE. See "Management."

***For as long as we are an emerging growth company, we will not be required to comply with certain reporting requirements, including those relating to accounting standards and disclosure about our executive compensation, that apply to other public companies.***

We are classified as an "emerging growth company" under the JOBS Act. For as long as we are an emerging growth company, which may be up to five full fiscal years, unlike other public companies, we will not be required to, among other things, (1) provide an auditor's attestation report on management's assessment of the effectiveness of our system of internal control over financial reporting pursuant to Section 404(b) of the Sarbanes Oxley Act of 2002, (2) comply with any new requirements adopted by the PCAOB requiring mandatory audit firm rotation or a supplement to the auditor's report in which the auditor would be required to provide additional information about the audit and the financial statements of the issuer, (3) comply with any new audit rules adopted by the PCAOB after April 5, 2012 unless the SEC determines otherwise, (4) provide certain disclosure regarding executive

compensation required of larger public companies or (5) hold stockholder advisory votes on executive compensation.

***We may issue preferred stock whose terms could adversely affect the voting power or value of our common stock.***

Our certificate of incorporation authorizes us to issue, without the approval of our stockholders, one or more classes or series of preferred stock having such designations, preferences, limitations and relative rights, including preferences over our common stock respecting dividends and distributions, as our board of directors may determine. The terms of one or more classes or series of preferred stock could adversely impact the voting power or value of our common stock. For example, we might grant holders of preferred stock the right to elect some number of our directors in all events or on the happening of specified events or the right to veto specified transactions. Similarly, the repurchase or redemption rights or liquidation preferences we might assign to holders of preferred stock could affect the residual value of the common stock.

## CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

The information in this prospectus includes "forward-looking statements." All statements, other than statements of historical fact included in this prospectus, regarding our strategy, future operations, financial position, estimated revenues and losses, projected costs, prospects, plans and objectives of management are forward-looking statements. When used in this prospectus, the words "could," "believe," "anticipate," "intend," "estimate," "expect," "project" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain such identifying words. These forward-looking statements are based on our current expectations and assumptions about future events and are based on currently available information as to the outcome and timing of future events. When considering forward-looking statements, you should keep in mind the risk factors and other cautionary statements described under the heading "Risk Factors" included in this prospectus. These forward-looking statements are based on management's current belief, based on currently available information, as to the outcome and timing of future events.

Forward-looking statements may include statements about our:

- business strategy;
- reserves;
- financial strategy, liquidity and capital required for our development program;
- realized natural gas, NGLs and oil prices;
- timing and amount of future production of natural gas, NGLs and oil;
- hedging strategy and results;
- future drilling plans;
- competition and government regulations;
- pending legal or environmental matters;
- marketing of natural gas, NGLs and oil;
- leasehold or business acquisitions;
- costs of developing our properties and conducting our gathering and other midstream operations;
- general economic conditions;
- credit markets;
- uncertainty regarding our future operating results; and
- plans, objectives, expectations and intentions contained in this prospectus that are not historical.

We caution you that these forward-looking statements are subject to all of the risks and uncertainties, most of which are difficult to predict and many of which are beyond our control, incident to the exploration for and development, production, gathering and sale of natural gas, NGLs and oil. These risks include, but are not limited to, commodity price volatility, inflation, lack of availability of drilling and production equipment and services, environmental risks, drilling and other operating risks, regulatory changes, the uncertainty inherent in estimating natural gas, NGLs and oil reserves and in projecting future rates of production, cash flow and access to capital, the timing of development expenditures, and the other risks described under "Risk Factors" in this prospectus.

Reserve engineering is a process of estimating underground accumulations of natural gas, NGLs, and oil that cannot be measured in an exact way. The accuracy of any reserve estimate depends on the

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quality of available data, the interpretation of such data and price and cost assumptions made by reserve engineers. In addition, the results of drilling, testing and production activities may justify revisions of estimates that were made previously. If significant, such revisions would change the schedule of any further production and development drilling. Accordingly, reserve estimates may differ significantly from the quantities of natural gas, NGLs and oil that are ultimately recovered.

Should one or more of the risks or uncertainties described in this prospectus occur, or should underlying assumptions prove incorrect, our actual results and plans could differ materially from those expressed in any forward-looking statements.

All forward-looking statements, expressed or implied, included in this prospectus are expressly qualified in their entirety by this cautionary statement. This cautionary statement should also be considered in connection with any subsequent written or oral forward-looking statements that we or persons acting on our behalf may issue.

Except as otherwise required by applicable law, we disclaim any duty to update any forward-looking statements, all of which are expressly qualified by the statements in this section, to reflect events or circumstances after the date of this prospectus.

## USE OF PROCEEDS

We expect to receive approximately \$ \_\_\_\_\_ of net proceeds from the sale of the common stock offered by us after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds from this offering to repay approximately \$ \_\_\_\_\_ million of outstanding borrowings under our credit facility and to fund approximately \$ \_\_\_\_\_ million of our capital expenditure program. As of March 31, 2013, we had \$436 million of outstanding borrowings and letters of credit under our credit facility, which matures in May 2016 and bears interest at a variable rate, which was approximately 2.0% as of March 31, 2013. The borrowings to be repaid were incurred primarily for our drilling and development program and for general corporate purposes. While we currently do not have plans to immediately borrow additional amounts under the credit facility, we may at any time reborrow amounts repaid under the credit facility.

A \$1.00 increase or decrease in the assumed initial public offering price of \$ \_\_\_\_\_ per share would cause the net proceeds from this offering, after deducting the underwriting discounts and commissions and estimated offering expenses payable to us, to increase or decrease, respectively, by approximately \$ \_\_\_\_\_ million. If the proceeds increase due to a higher initial public offering price, we would use the additional net proceeds to fund a portion of our capital expenditure program. If the proceeds decrease due to a lower initial public offering price, then we would reduce by a corresponding amount the net proceeds directed to repay outstanding borrowings under our credit facility.

We will not receive any of the proceeds from the sale of shares of our common stock by the selling stockholder pursuant to any exercise by the underwriters of their option to purchase additional shares of our common stock. We will pay all expenses related to this offering, other than underwriting discounts and commissions related to the shares sold by the selling stockholder.

Affiliates of certain of the underwriters are lenders under our credit facility and will receive a portion of the proceeds of this offering. Accordingly, this offering is being made in compliance with Rule 5121 of the FINRA. See "Underwriting (Conflicts of Interest)."

## DIVIDEND POLICY

We do not anticipate declaring or paying any cash dividends to holders of our common stock in the foreseeable future. We currently intend to retain future earnings, if any, to finance the growth of our business. Our future dividend policy is within the discretion of our board of directors and will depend upon then-existing conditions, including our results of operations, financial condition, capital requirements, investment opportunities, statutory restrictions on our ability to pay dividends and other factors our board of directors may deem relevant. In addition, our credit facility and the indentures governing our senior notes place certain restrictions on our ability to pay cash dividends.

## CAPITALIZATION

The following table sets forth our cash and cash equivalents and capitalization as of March 31, 2013:

- on an actual basis; and
- as adjusted to give effect to the transactions described under "Corporate Reorganization" which will be completed immediately prior to or contemporaneously with the closing of this offering and the application of the net proceeds as set forth under "Use of Proceeds."

This table should be read in conjunction with, and is qualified in its entirety by reference to, "Use of Proceeds" and our historical audited and unaudited consolidated financial statements and the accompanying notes appearing elsewhere in this prospectus.

	As of March 31, 2013	
	Actual	As Adjusted
	(in thousands)	
Cash and cash equivalents	\$ 4,806	\$
Indebtedness:		
Senior secured revolving credit facility(1)	404,000	—
9.375% senior notes due 2017	525,000	525,000
7.25% senior notes due 2019	400,000	400,000
6.00% senior notes due 2020	525,000	525,000
9.00% senior note due 2013	25,000	25,000
Net unamortized premium	8,530	8,530
Total indebtedness	<u>1,887,530</u>	<u>1,483,530</u>
Equity:		
Members' equity	1,460,947	—
Common stock, \$1.00 par value; shares authorized (as adjusted); ; shares issued and outstanding (as adjusted)	—	—
Preferred stock, \$ par value; shares authorized (as adjusted); no shares issued and outstanding (as adjusted)	—	—
Additional paid in capital(2)	—	—
Accumulated earnings	164,793	—
Total equity	<u>1,625,740</u>	<u>—</u>
Total capitalization	<u>\$ 3,513,270</u>	<u>\$</u>

- (1) As of \_\_\_\_\_, 2013, the outstanding balance under our credit facility was approximately \$ \_\_\_\_\_ million. In addition, as of \_\_\_\_\_, 2013, we had outstanding letters of credit under our credit facility of approximately \$ \_\_\_\_\_ million. As of \_\_\_\_\_, 2013, after giving effect to the application of the net proceeds of this offering, we would have had approximately \$ \_\_\_\_\_ million of available borrowing capacity under our credit facility.
- (2) In connection with our corporate reorganization, we expect to recognize stock compensation expense that will be accounted for as a capital contribution by Antero Investment. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Corporate Reorganization."

## DILUTION

Purchasers of the common stock in this offering will experience immediate and substantial dilution in the net tangible book value per share of the common stock for accounting purposes. Our net tangible book value as of March 31, 2013, after giving effect to the transactions described under "Corporate Reorganization," was \$            million, or \$            per share. Pro forma net tangible book value per share is determined by dividing our pro forma tangible net worth (tangible assets less total liabilities) by the total number of outstanding shares of common stock that will be outstanding immediately prior to the closing of this offering including giving effect to our corporate reorganization. After giving effect to the sale of the shares in this offering and further assuming the receipt of the estimated net proceeds (after deducting estimated underwriting discounts and commissions and estimated offering expenses), our adjusted pro forma net tangible book value as of March 31, 2013 would have been approximately \$            million, or \$            per share. This represents an immediate increase in the net tangible book value of \$            per share to our existing stockholders and an immediate dilution (i.e., the difference between the offering price and the adjusted pro forma net tangible book value after this offering) to new investors purchasing shares in this offering of \$            per share. The following table illustrates the per share dilution to new investors purchasing shares in this offering:

Assumed initial public offering price per share	\$
Pro forma net tangible book value per share as of March 31, 2013 (after giving effect to our corporate reorganization)	\$
Increase per share attributable to new investors in this offering	_____
As adjusted pro forma net tangible book value per share after giving effect to our corporate reorganization and this offering	_____
Dilution in pro forma net tangible book value per share to new investors in this offering	\$

The following table summarizes, on an adjusted pro forma basis as of March 31, 2013, the total number of shares of common stock owned by existing stockholders and to be owned by new investors, the total consideration paid, and the average price per share paid by our existing stockholders and to be paid by new investors in this offering at \$           , the midpoint of the range of the initial public offering price set forth on the cover page of this prospectus, calculated before deduction of estimated underwriting discounts and commissions:

	Shares Acquired			Total Consideration			Average Price
	Number	Percent		Amount	Percent		Per Share
Existing stockholders(1)		%	\$		%	\$	
New investors in this offering							
Total		%	\$		%	\$	

- (1) The number of shares disclosed for the existing stockholders includes            shares that may be sold by the selling stockholder in this offering pursuant to any exercise of the underwriters' option to purchase additional shares of common stock.

A \$1.00 increase or decrease in the assumed initial public offering price of \$            per share, which is the midpoint of the range set forth on the cover page of this prospectus, would increase or decrease our as adjusted pro forma net tangible book value as of March 31, 2013 by approximately \$            million, the as adjusted pro forma net tangible book value per share after this offering by \$            per share and the dilution in pro forma as adjusted net tangible book value per share to new investors in this offering by \$            per share, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

## SELECTED HISTORICAL CONSOLIDATED FINANCIAL DATA

The following table shows our selected historical consolidated financial data, for the periods and as of the dates indicated, for Antero Resources LLC and its subsidiaries.

The selected statement of operations data for the years ended December 31, 2010, 2011 and 2012 and the balance sheet data as of December 31, 2011 and 2012 are derived from our audited consolidated financial statements included elsewhere in this prospectus. The selected statement of operations data for the years ended December 31, 2008 and 2009 and the balance sheet data as of December 31, 2008, 2009, and 2010 are derived from our audited consolidated financial statements not included in this prospectus. The selected statement of operations data for the three months ended March 31, 2012 and 2013 and the balance sheet data as of March 31, 2013 are derived from our unaudited consolidated financial statements included elsewhere in this prospectus. The balance sheet data as of March 31, 2012 is derived from our unaudited consolidated financial statements not included in this prospectus.

The statement of operations data for all periods presented has been recast to present the results of operations from our Piceance Basin and Arkoma Basin operations in discontinued operations. The losses on the sales of these properties are also included in discontinued operations in 2012. The results from continuing operations reflect our remaining operations in the Appalachian Basin. No part of our general and administrative expenses or interest expense was allocated to discontinued operations.

The selected historical consolidated financial data has been prepared on a consistent basis with our audited consolidated financial statements. In the opinion of management, such selected historical consolidated financial data reflects all adjustments (consisting of normal and recurring accruals) considered necessary to present our financial position for the periods presented.

The results of operations for the interim periods are not necessarily indicative of the results that may be expected for the full year because of the impact of fluctuations in prices received from natural gas and oil, natural production declines, the uncertainty of exploration and development drilling results and other factors. The selected financial data presented below are qualified in their entirety by reference to, and should be read in conjunction with, "Capitalization," "Management's Discussion and



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Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes included elsewhere herein.

(in thousands, except ratios)	Year Ended December 31,					Three Months Ended	
	2008	2009	2010	2011	2012	2012	2013
<b>Statement of operations data:</b>							
Operating revenues:							
Natural gas sales	\$ —	\$ 2,252	\$ 47,392	\$ 195,116	\$ 259,743	\$ 45,134	\$ 121,946
NGL sales	—	—	—	—	3,719	—	10,572
Oil sales	—	—	39	173	1,520	48	877
Realized gains on commodity derivative instruments	—	—	15,063	49,944	178,491	46,852	48,131
Unrealized gains (losses) on commodity derivative instruments	—	3,910	62,536	446,120	1,055	170,402	(120,072)
Gain on sale of assets	—	—	—	—	291,190	291,305	—
<b>Total revenues</b>	<b>—</b>	<b>6,162</b>	<b>125,030</b>	<b>691,353</b>	<b>735,718</b>	<b>553,741</b>	<b>61,454</b>
Operating expenses:							
Lease operating expenses	—	28	1,158	4,608	6,243	693	1,071
Gathering, compression, processing and transportation	—	421	9,237	37,315	91,094	11,575	40,970
Production taxes	—	128	2,885	11,915	20,210	3,742	8,619
Exploration expenses	—	2,095	2,350	4,034	14,675	1,804	4,362
Impairment of unproved properties	—	100	6,076	4,664	12,070	286	1,556
Depletion, depreciation and amortization	391	1,706	18,522	55,716	102,026	16,110	40,364
Accretion of asset retirement obligations	—	—	11	76	101	22	264
Expenses related to acquisition of business	—	—	2,544	—	—	—	—
General and administrative	16,171	20,843	21,952	33,342	45,284	9,173	12,717
Loss on sale of compressor station	—	—	—	8,700	—	—	—
<b>Total operating expenses</b>	<b>16,562</b>	<b>25,321</b>	<b>64,735</b>	<b>160,370</b>	<b>291,703</b>	<b>43,405</b>	<b>109,923</b>
<b>Operating income (loss)</b>	<b>(16,562)</b>	<b>(19,159)</b>	<b>60,295</b>	<b>530,983</b>	<b>444,015</b>	<b>510,336</b>	<b>(48,469)</b>
Other expense:							
Interest expense	\$ (37,594)	\$ (36,053)	\$ (56,463)	\$ (74,404)	\$ (97,510)	\$ (24,370)	\$ (29,928)
Realized and unrealized losses on interest derivative instruments, net	(15,245)	(4,985)	(2,677)	(94)	—	—	—
<b>Total other expense</b>	<b>(52,839)</b>	<b>(41,038)</b>	<b>(59,140)</b>	<b>(74,498)</b>	<b>(97,510)</b>	<b>(24,370)</b>	<b>(29,928)</b>
<b>Income (loss) before income taxes</b>	<b>(69,401)</b>	<b>(60,197)</b>	<b>1,155</b>	<b>456,485</b>	<b>346,505</b>	<b>485,966</b>	<b>(78,397)</b>
Income tax (expense) benefit	26,520	—	(939)	(185,297)	(121,229)	(198,411)	30,400
<b>Income (loss) from continuing operations</b>	<b>(42,881)</b>	<b>(60,197)</b>	<b>216</b>	<b>271,188</b>	<b>225,276</b>	<b>287,555</b>	<b>(47,997)</b>
Discontinued operations:							
Income (loss) from results of operations and sale of discontinued operations	126,837	(45,972)	228,412	121,490	(510,345)	40,176	—
<b>Net income (loss) attributable to Antero equity owners</b>	<b>\$ (83,956)</b>	<b>\$ (106,169)</b>	<b>\$ 228,628</b>	<b>\$ 392,678</b>	<b>\$ (285,069)</b>	<b>\$ 327,731</b>	<b>\$ (47,997)</b>
<b>Balance sheet data (at period end):</b>							
Cash and cash equivalents	\$ 38,969	\$ 10,669	\$ 8,988	\$ 3,343	\$ 18,989	\$ 6,493	\$ 4,806
Other current assets	165,199	84,175	147,917	330,299	255,617	403,938	190,238
<b>Total current assets</b>	<b>204,168</b>	<b>94,844</b>	<b>156,905</b>	<b>333,642</b>	<b>274,606</b>	<b>410,431</b>	<b>195,044</b>
Natural gas properties, at cost (successful efforts method):							
Unproved properties	649,605	596,694	737,358	834,255	1,243,237	897,400	1,392,152
Producing properties	1,148,306	1,340,827	1,762,206	2,497,306	1,689,132	2,663,096	2,107,151
Gathering systems and facilities	179,836	185,688	85,404	142,241	168,930	89,095	238,234
Other property and equipment	3,113	3,302	5,975	8,314	9,517	8,584	10,238
	1,980,860	2,126,511	2,590,943	3,482,116	3,110,816	3,658,175	3,747,775
Less accumulated depletion, depreciation and amortization	(183,145)	(322,992)	(431,181)	(601,702)	(173,343)	(646,675)	(213,707)
<b>Property and equipment, net</b>	<b>1,797,715</b>	<b>1,803,519</b>	<b>2,159,762</b>	<b>2,880,414</b>	<b>2,937,473</b>	<b>3,011,500</b>	<b>3,534,068</b>
<b>Other assets</b>	<b>27,084</b>	<b>38,203</b>	<b>169,620</b>	<b>574,744</b>	<b>406,714</b>	<b>706,007</b>	<b>363,767</b>
<b>Total assets</b>	<b>\$ 2,028,967</b>	<b>\$ 1,936,566</b>	<b>\$ 2,486,287</b>	<b>\$ 3,788,800</b>	<b>\$ 3,618,793</b>	<b>\$ 4,127,938</b>	<b>\$ 4,092,879</b>
<b>Current liabilities</b>	<b>\$ 208,209</b>	<b>\$ 112,493</b>	<b>\$ 152,483</b>	<b>\$ 255,058</b>	<b>\$ 376,296</b>	<b>\$ 317,658</b>	<b>\$ 473,104</b>
Long-term indebtedness	622,734	515,499	652,632	1,317,330	1,444,058	1,095,252	1,862,530
Other long-term liabilities	20,469	9,467	86,185	257,606	124,702	428,491	131,505
<b>Total equity</b>	<b>1,177,555</b>	<b>1,299,107</b>	<b>1,594,987</b>	<b>1,958,806</b>	<b>1,673,737</b>	<b>2,286,537</b>	<b>1,625,740</b>
<b>Total liabilities and equity</b>	<b>\$ 2,028,967</b>	<b>\$ 1,936,566</b>	<b>\$ 2,486,287</b>	<b>\$ 3,788,800</b>	<b>\$ 3,618,793</b>	<b>\$ 4,127,938</b>	<b>\$ 4,092,879</b>
<b>Other financial data:</b>							
EBITDAX from continuing operations(1)	\$ (15,288)	\$ (15,857)	\$ 27,824	\$ 160,259	\$ 284,710	\$ 67,651	\$ 118,749
EBITDAX from discontinued operations(1)	223,801	217,127	169,854	180,562	149,605	54,689	—
<b>Total EBITDAX(1)</b>	<b>\$ 208,513</b>	<b>\$ 201,270</b>	<b>\$ 197,678</b>	<b>\$ 340,821</b>	<b>\$ 434,315</b>	<b>\$ 122,340</b>	<b>\$ 118,749</b>
Net cash provided by operating activities	157,515	149,307	127,791	266,307	332,255	100,491	110,207
Net cash provided by (used in) investing activities	(1,004,010)	(281,899)	(230,672)	(901,249)	(463,491)	124,699	(547,885)
Net cash provided by (used in) financing activities	874,350	104,292	101,200	629,297	146,882	(222,040)	423,495
<b>Capital expenditures(2)</b>	<b>1,041,748</b>	<b>203,454</b>	<b>423,002</b>	<b>929,887</b>	<b>1,755,430</b>	<b>259,692</b>	<b>638,496</b>

(1) "EBITDAX" is a non-GAAP financial measure that we define as net income (loss) before interest expense or interest income, realized and unrealized gains or losses on interest rate derivative instruments, taxes, impairments, depletion, depreciation, amortization, exploration expense, unrealized



commodity hedge gains or losses, franchise taxes, stock compensation, business acquisition and gain or loss on sale of assets. "EBITDAX," as used and defined by us, may not be comparable to similarly titled measures employed by other companies and is not a measure of performance calculated in accordance with GAAP. EBITDAX should not be considered in isolation or as a substitute for operating income, net income or loss, cash flows provided by operating, investing and financing activities, or other income or cash flow statement data prepared in accordance with GAAP. EBITDAX provides no information regarding a company's capital structure, borrowings, interest costs, capital expenditures, and working capital movement or tax position. EBITDAX does not represent funds available for discretionary use because those funds may be required for debt service, capital expenditures, working capital, income taxes, franchise taxes, exploration expenses, and other commitments and obligations. However, our management team believes EBITDAX is useful to an investor in evaluating our financial performance because this measure:

- is widely used by investors in the oil and natural gas industry to measure a company's operating performance without regard to items excluded from the calculation of such term, which can vary substantially from company to company depending upon accounting methods and book value of assets, capital structure and the method by which assets were acquired, among other factors;
- helps investors to more meaningfully evaluate and compare the results of our operations from period to period by removing the effect of our capital structure from our operating structure; and
- is used by our management team for various purposes, including as a measure of operating performance, in presentations to our board of directors, as a basis for strategic planning and forecasting and by our lenders pursuant to covenants under our credit facility and the indentures governing our senior notes.

There are significant limitations to using EBITDAX as a measure of performance, including the inability to analyze the effect of certain recurring and non-recurring items that materially affect our net income or loss, the lack of comparability of results of operations of different companies and the different methods of calculating EBITDAX reported by different companies. The following table represents a reconciliation of our net income (loss) from continuing operations to EBITDAX from continuing operations, a reconciliation of our net income (loss) from discontinued operations to EBITDAX from discontinued operations, and a reconciliation of our total EBITDAX to net cash provided by operating activities per our consolidated statements of cash flows, in each case for the periods presented:

(in thousands)	Year Ended December 31,					Three Months Ended March 31,	
	2008	2009	2010	2011	2012	2012	2013
Net income (loss) from continuing operations	\$ (42,881)	\$ (60,197)	\$ 216	\$ 271,188	\$ 225,276	\$ 287,555	\$ (47,997)
Unrealized (gains) losses on commodity derivative contracts	—	(3,909)	(62,536)	(446,120)	(1,055)	(170,402)	120,072
(Gain) loss on sale of assets	—	—	—	8,700	(291,190)	(291,305)	—
Interest expense and other	52,839	41,038	59,140	74,498	97,510	24,370	29,928
Provision (benefit) for income taxes	(26,520)	—	939	185,297	121,229	198,411	(30,400)
Depreciation, depletion, amortization, and accretion	391	1,706	18,533	55,792	102,127	16,132	40,628
Impairment of unproved properties	—	100	6,076	4,664	12,070	286	1,556
Exploration expense	—	2,095	2,350	4,034	14,675	1,804	4,362
Other	883	3,310	3,106	2,206	4,068	800	600
EBITDAX from continuing operations	(15,288)	(15,857)	27,824	160,259	284,710	67,651	118,749
Net income (loss) from discontinued operations	126,837	(45,972)	228,412	121,490	(510,345)	40,176	—
Unrealized (gains) losses on commodity derivative contracts	(90,301)	65,095	(108,035)	(113,476)	45,808	(32,561)	—
(Gain) loss on sale of assets	—	—	(147,559)	—	795,945	—	—
Provision (benefit) for income taxes	29,549	(2,605)	29,070	45,155	(272,553)	14,444	—
Depreciation, depletion, amortization, and accretion	124,606	138,372	115,739	115,164	89,124	31,668	—
Impairment of unproved properties	10,112	54,104	29,783	6,387	962	750	—
Exploration expense	22,998	8,133	22,444	5,842	664	212	—
EBITDAX from discontinued operations	223,801	217,127	169,854	180,562	149,605	54,689	—
Total EBITDAX	\$ 208,513	\$ 201,270	\$ 197,678	\$ 340,821	\$ 434,315	\$ 122,340	\$ 118,749
Interest expense and other	(52,839)	(41,038)	(59,140)	(74,498)	(97,510)	(24,370)	(29,928)
Exploration expense	(22,998)	(10,228)	(24,794)	(9,876)	(15,339)	(2,016)	(4,362)
Changes in current assets and current liabilities	4,047	(2,648)	(698)	8,309	9,887	4,194	24,961
Other	20,792	1,951	14,745	1,551	902	343	787
Net cash provided by operating activities	\$ 157,515	\$ 149,307	\$ 127,791	\$ 266,307	\$ 332,255	\$ 100,491	\$ 110,207

- (2) Capital expenditures as shown in this table differ from the amounts shown in the statement of cash flows in the consolidated financial statements because amounts in this table include changes in accounts payable for capital expenditures from the previous reporting period while the amounts in the statement of cash flows in the financial statements are presented on a cash basis.

## MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

*The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes included elsewhere in this prospectus. The following discussion contains "forward-looking statements" that reflect our future plans, estimates, beliefs and expected performance. We caution that assumptions, expectations, projections, intentions, or beliefs about future events may, and often do, vary from actual results and the differences can be material. Some of the key factors that could cause actual results to vary from our expectations include changes in natural gas, NGL and oil prices, the timing of planned capital expenditures, availability of acquisitions, uncertainties in estimating proved reserves and forecasting production results, operational factors affecting the commencement or maintenance of producing wells, the condition of the capital markets generally, as well as our ability to access them, and uncertainties regarding environmental regulations or litigation and other legal or regulatory developments affecting our business, as well as those factors discussed below, all of which are difficult to predict. In light of these risks, uncertainties and assumptions, the forward-looking events discussed may not occur. See "Cautionary Statement Regarding Forward-Looking Statements." Also, see the risk factors and other cautionary statements described under the heading "Risk Factors" included elsewhere in this prospectus. We do not undertake any obligation to publicly update any forward-looking statements except as otherwise required by applicable law.*

### **Our Company**

We are an independent natural gas and oil company engaged in the exploitation, development and acquisition of natural gas, NGLs and oil properties located in the Appalachian Basin in West Virginia, Ohio and Pennsylvania. We are focused on creating shareholder value through the development of our large portfolio of repeatable, low cost, liquids-rich drilling opportunities in two of the premier North American shale plays. We currently hold approximately 320,000 net acres in the southwestern core of the Marcellus Shale and approximately 100,000 net acres in the core of the Utica Shale. In addition, we estimate that approximately 170,000 net acres of our Marcellus Shale leasehold are prospective for the slightly shallower Upper Devonian Shale. As of June 30, 2013, our estimated proved, probable and possible reserves were 6.3 Tcfe, 14.0 Tcfe and 7.4 Tcfe, respectively, and our proved reserves were 23% proved developed and 91% natural gas. As of June 30, 2013, our drilling inventory consisted of 4,576 identified potential horizontal well locations, approximately 82% of which are liquids-rich drilling opportunities.

The statement of operations data for all periods presented in this "Management's Discussion and Analysis of Financial Condition and Results of Operations" has been recast to present the results of operations from our Arkoma Basin and Piceance operations in discontinued operations.

### **Source of Our Revenues**

Our revenues are derived from the sale of natural gas and oil production, as well as the sale of NGLs that are extracted from our natural gas during processing. Our production revenues derive entirely from the continental United States. During 2012 our revenues from both continuing and discontinued operations were comprised of approximately 85% from the production and sale of natural gas and 15% from the production and sale of NGLs and oil. Natural gas, NGL, and oil prices are inherently volatile and are influenced by many factors outside of our control. Substantially all of our production is derived from natural gas wells which also produce NGLs and limited quantities of oil. To achieve more predictable cash flows and to reduce our exposure to downward price fluctuations, we use derivative instruments to hedge future sales prices on a significant portion of our natural gas production. We currently use fixed price natural gas swaps in which we receive a fixed price for future production in exchange for a payment of the variable market price received at the time future production is sold. At the end of each period we estimate the fair value of these swaps and recognize

an unrealized gain or loss. We have not elected hedge accounting and, accordingly, the unrealized gains and losses on open positions are reflected in earnings. We expect continued volatility in the fair value of these swaps.

### Principal Components of Our Cost Structure

- *Lease operating expenses.* These are the day to day operating costs incurred to maintain production of our natural gas, NGLs, and oil. Such costs include produced water recycling, pumping, maintenance, repairs, and workover expenses. Cost levels for these expenses can vary based on supply and demand for oilfield services.
- *Gathering, compression, processing and transportation.* These are costs incurred to bring natural gas, NGLs, and oil to the market. Such costs include the costs to operate and maintain our low and high pressure gathering and compression systems as well as fees paid to third parties who operate low- and high-pressure gathering systems that transport our gas. They also include costs to process and extract NGLs from our produced gas and to transport our NGLs and oil to market. We often enter into fixed price long-term contracts that secure transportation and processing capacity that may include minimum volume commitments, the cost for which is included in these expenses.
- *Production taxes.* Production taxes consist of severance and ad valorem taxes and are paid on produced natural gas, NGLs, and oil based on a percentage of market prices (not hedged prices) and at fixed per unit rates established by federal, state or local taxing authorities.
- *Exploration expense.* These are geological and geophysical costs and include seismic costs, costs of unsuccessful exploratory dry holes and unsuccessful leasing efforts.
- *Impairment of unproved and proved properties.* These costs include unproved property impairment and costs associated with lease expirations. We could record impairment charges for proved properties if the carrying value were to exceed estimated future cash flows. Through March 31, 2013, we have not recorded any impairment for proved properties.
- *Depreciation, depletion and amortization.* Depreciation, depletion and amortization, or DD&A, includes the systematic expensing of the capitalized costs incurred to acquire, explore and develop natural gas, NGLs, and oil. As a "successful efforts" company, we capitalize all costs associated with our acquisition and development efforts and all successful exploration efforts, and allocate these costs to each unit of production using the units of production method.
- *General and administrative expense.* These costs include overhead, including payroll and benefits for our corporate staff, costs of maintaining our headquarters, costs of managing our production and development operations, franchise taxes, audit and other professional fees and legal compliance expenses.
- *Interest expense.* We finance a portion of our working capital requirements and acquisitions with borrowings under our credit facility. As a result, we incur substantial interest expense that is affected by both fluctuations in interest rates and our financing decisions. At March 31, 2013, we also had a fixed interest rate of 9.375% on senior notes having a principal balance of \$525 million, a fixed interest rate of 7.25% on senior notes having a principal balance of \$400 million, and a fixed interest rate of 6.00% on senior notes having a principal balance of \$525 million. We expect to continue to incur significant interest expense as we continue to grow.
- *Income tax expense.* Through December 31, 2011, each of our operating entities filed separate federal and state income tax returns; therefore, our provision for income taxes through that date consisted of the sum of our income tax provisions for each of the operating entities. In October 2012, we completed a reorganization of our legal structure by contributing all of the outstanding

shares owned by Antero Resources LLC in each of the Antero Arkoma, Antero Piceance and Antero Pipeline corporations to Antero Appalachian. Antero Arkoma, Antero Piceance, and Antero Pipeline were then converted to limited liability companies. As a result, for income tax purposes, the operations from the date of the organizations and tax attributes of Arkoma, Piceance and Pipeline are now combined with Antero Appalachian for tax reporting purposes. Our subsidiaries are subject to state and federal income taxes but are currently not in a tax paying position for regular federal income taxes, primarily due to the current deductibility of intangible drilling costs and the deferral of unrealized commodity hedge gains for tax purposes until they are realized. We do pay some state income or franchise taxes where state income or franchise taxes are determined on a basis other than income. We have generated net operating loss carryforwards that expire at various dates from 2024 through 2032. We have recognized the value of these net operating losses to the extent of our deferred tax liabilities. We recorded valuation allowances for deferred tax assets at December 31, 2012 of approximately \$48 million primarily for capital loss and state loss carryforwards for which we do not believe we will realize a benefit. The amount of deferred tax assets considered realizable, however, could change in the near term as we generate taxable income or estimates of future taxable income are reduced.

The calculation of our tax liabilities involves uncertainties in the application of complex tax laws and regulations. We give financial statement recognition to those tax positions that we believe are more likely than not to be sustained upon examination by the Internal Revenue Service or state revenue authorities. The financial statements included unrecognized benefits at December 31, 2012 and March 31, 2013 of \$15 million that, if recognized, would result in a reduction of other long-term liabilities and an increase in noncurrent deferred tax liabilities. No impact to our 2012 effective tax rate would result from the recognition of the tax benefits. As of March 31, 2013, we have accrued \$0.2 million of interest expense on unrecognized tax benefits.

### **Corporate Reorganization**

The limited liability company agreement of Antero Investment to be adopted in connection with the closing of this offering provides a mechanism by which the shares of our common stock to be allocated amongst the members of Antero Investment, including Antero Resources Employee Holdings LLC, or Employee Holdings, will be determined. As a result, the satisfaction of all performance, market, and service conditions relative to the membership interests awards held by Employee Holdings will be probable. Accordingly, we will recognize approximately \$            million in a non-cash charge for stock compensation expense for the estimated fair value of the prospective distributions to Employee Holdings at the closing of this offering and an additional \$            million over the remaining service period. The charge will not have a dilutive effect on the pro forma as adjusted net tangible book value per share to new investors in this offering.

We will retain an independent valuation firm to estimate the fair value of the shares to be distributed in satisfaction of the profits interests and currently expect that it could range from approximately \$            million to \$            million and will be charged to expense at the closing of this offering and over the remaining service period, respectively. Because consideration for the membership interests awards will be deemed given by Antero Investment, the charge to expense will be accounted for as a capital contribution by Antero Investment to us and credited to additional paid-in capital.

**Results of Operations**

**Three Months Ended March 31, 2012 Compared to Three Months Ended March 31, 2013**

The following table sets forth selected operating data (as recast for discontinued operations) for the three months ended March 31, 2012 compared to the three months ended March 31, 2013:

(in thousands, except per unit data)	<b>Three Months Ended March 31,</b>			
	2012	2013	Amount of Increase (Decrease)	Percent Change
<b>Operating revenues:</b>				
Natural gas sales	\$ 45,134	\$ 121,946	\$ 76,812	170%
NGL sales	—	10,572	10,572	*
Oil sales	48	877	829	1,727%
Realized gains on derivative instruments	46,852	48,131	1,279	3%
Unrealized gains (losses) on derivative instruments	170,402	(120,072)	(290,474)	*
Gain on sale of assets	291,305	—	(291,305)	*
Total operating revenues	553,741	61,454	(492,287)	*
<b>Operating expenses:</b>				
Lease operating expenses	693	1,071	378	55%
Gathering, compression, processing and transportation	11,575	40,970	29,395	254%
Production taxes	3,742	8,619	4,877	130%
Exploration expenses	1,804	4,362	2,558	142%
Impairment of unproved properties	286	1,556	1,270	444%
Depletion, depreciation and amortization	16,110	40,364	24,254	151%
Accretion of asset retirement obligations	22	264	242	1,100%
General and administrative	9,173	12,717	3,544	39%
Total operating expenses	43,405	109,923	66,518	153%
Operating income (loss)	510,336	(48,469)	(558,805)	*
Interest expense	(24,370)	(29,928)	(5,558)	23%
Income (loss) before income taxes	485,966	(78,397)	(564,363)	*
Income tax benefit (expense)	(198,411)	30,400	228,811	*
Income (loss) from continuing operations	287,555	(47,997)	(335,552)	*
Income from discontinued operations	40,176	—	(40,176)	*
Net income (loss) attributable to Antero members	\$ 327,731	\$ (47,997)	\$ (375,728)	*
EBITDAX from continuing operations(1)	\$ 67,651	\$ 118,749	\$ 51,098	76%
EBITDAX from discontinued operations(1)	54,689	—	(54,689)	*
Total EBITDAX(1)	\$ 122,340	\$ 118,749	\$ (3,591)	(3)%
<b>Production data:</b>				
Natural gas (Bcf)	16	33	17	106%
NGLs (MBbl)	—	205	205	*
Oil (MBbl)	1	10	9	900%
Combined (Bcfe)	16	34	18	114%
Daily combined production (MMcfe/d)	177	383	206	114%
<b>Average sales prices before effects of hedges(2):</b>				
Natural gas (per Mcf)	\$ 2.80	\$ 3.67	\$ 0.87	31%
NGLs (per Bbl)	—	\$ 51.55	*	*
Oil (per Bbl)	\$ 102.13	\$ 86.12	\$ (16.01)	(16)%
Combined (per Mcfe)	\$ 2.80	\$ 3.87	\$ 1.07	38%
<b>Average realized sales prices after effects of hedges(2):</b>				
Natural gas (per Mcf)	\$ 5.70	\$ 5.13	\$ (0.57)	(10)%
NGLs (per Bbl)	—	\$ 51.55	*	*
Oil (per Bbl)	\$ 102.13	\$ 75.41	\$ (26.72)	(26)%
Combined (per Mcfe)	\$ 5.70	\$ 5.26	\$ (0.44)	(8)%
<b>Average costs (per Mcfe)(2):</b>				
Lease operating costs	\$ 0.04	\$ 0.03	\$ (0.01)	(25)%
Gathering, compression, processing and transportation	\$ 0.72	\$ 1.19	\$ 0.47	65%
Production taxes	\$ 0.23	\$ 0.25	\$ 0.02	9%
Depletion, depreciation and amortization	\$ 1.00	\$ 1.18	\$ 0.18	18%
General and administrative	\$ 0.57	\$ 0.37	\$ (0.20)	(35)%

(1) See "Selected Historical Consolidated Financial Data" included elsewhere in this prospectus for a definition of EBITDAX (a non-GAAP measure) and a reconciliation of EBITDAX to net income (loss).

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- (2) Average sales prices shown in the table reflect both of the before and after effects of our realized commodity hedging transactions. Our calculation of such after effects includes realized gains or losses on cash settlements for commodity derivatives, which do not qualify for hedge accounting because we do not designate or document them as hedges for accounting purposes. Oil and NGL production was converted at 6 Mcf per Bbl to calculate total Bcfe production and per Mcfe amounts. This ratio is an estimate of the equivalent energy content of the products and does not necessarily reflect their relative economic value.

\* Not meaningful or applicable.

*Natural gas, NGLs, and oil sales.* Revenues from the sale of natural gas, NGLs, and oil increased from \$45 million for the three months ended March 31, 2012 to \$133 million for the three months ended March 31, 2013, an increase of \$88 million, or 196%. Our production increased by 114% over that same period, from 16 Bcfe for the three months ended March 31, 2012 to 34 Bcfe for the three months ended March 31, 2013. Net equivalent prices before the effects of realized hedge gains increased from \$2.80 per Mcfe for the three months ended March 31, 2012 to \$3.87 for the three months ended March 31, 2013, an increase of 38%. Increased production volumes accounted for approximately \$51 million of the increase in year-over-year revenues (calculated as the change in year-to-year volumes times the prior year average price), and commodity price increases accounted for approximately \$37 million of the increase in year-over-year revenues (calculated as the change in year-to-year average price times current year production volumes). Production increases resulted from additional producing wells as a result of the ongoing Appalachian Basin drilling program.

*Commodity hedging activities.* To achieve more predictable cash flows and to reduce our exposure to downward price fluctuations, we enter into derivative contracts using fixed for variable swap contracts when management believes that favorable future sales prices for our natural gas production can be secured. Because we do not designate these derivatives as accounting hedges, they do not receive accounting hedge treatment and all mark-to-market gains or losses, as well as realized gains or losses on the derivative instruments, are recognized in our results of operations. The unrealized gains and losses represent the changes in the fair value of these swap agreements as the future strip prices fluctuate from the fixed price we will receive on future production.

For the three months ended March 31, 2012 and 2013, our hedges resulted in realized gains of \$47 million and \$48 million, respectively. For the three months ended March 31, 2012 and 2013, our hedges resulted in unrealized gains (losses) of \$170 million and \$(120) million, respectively. Prices for natural gas futures decreased from December 31, 2011 to March 31, 2012 and increased from December 31, 2012 to March 31, 2013, which, along with the reversal of previously recognized unrealized gains on settled hedge agreements, accounted for the unrealized gains for the three months ended March 31, 2012 and the unrealized losses for the three months ended March 31, 2013. Derivative asset or liability positions at the end of any accounting period may reverse to the extent natural gas strip prices increase or decrease from their levels at the end of the accounting period or as gains or losses are realized through settlement.

*Lease operating expenses.* Lease operating expenses increased by 55% from the three months ended March 31, 2012 to the three months ended March 31, 2013 from \$0.7 million to \$1.1 million due to the increase in the number of producing wells. On a per unit basis, lease operating expenses decreased by 25%, from \$0.04 per Mcfe for the three months ended March 31, 2012 to \$0.03 for the three months ended March 31, 2013, primarily because, during the early stages of production for Marcellus Shale wells, operating and maintenance expenses are low and initial production rates are higher than for wells that have been producing for longer periods of time.

*Gathering, compression, processing and transportation expense.* Gathering, compression, processing and transportation expense increased from \$12 million for the three months ended March 31, 2012 to \$41 million for the three months ended March 31, 2013, primarily due to an increase in production volumes and increased costs on firm transportation commitments. On a per unit basis, gathering, compression, processing and transportation expenses increased by \$0.47 per Mcfe, or 65%, for the three months ended March 31, 2013 compared to the three months ended March 31, 2012. In October



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2012, we began processing our natural gas in order to extract NGLs and the resulting processing charges accounted for \$0.15 per Mcfe of the increase in gathering, compression, processing and transportation charges from the three months ended March 31, 2012 to March 31, 2013. Additionally, gathering, fuel, and compression charges accounted for \$0.40 per Mcfe of the year-over-year increase. Firm transportation charges increased by \$4 million for the three months ended March 31, 2013 compared to the prior year period, but decreased by \$0.08 per Mcfe as total production increased from the prior year. We enter into long-term firm transportation agreements for a significant part of our current and expected future production in order to secure guaranteed capacity on major pipelines.

*Production tax expense.* Total production taxes increased by approximately \$5 million for the three months ended March 31, 2013 compared to the three months ended March 31, 2012, primarily as a result of increased production. On a per unit basis, production taxes increased from \$0.23 to \$0.25 per Mcfe. Production taxes as a percentage of natural gas, NGL, and oil revenues were 8.3% and 6.5% for the three months ended March 31, 2012 and 2013, respectively. Because part of our production taxes are based on a fixed amount per unit of production and part are based on sales prices, our production taxes as a percent of total sales decreased during the three months ended March 31, 2013 compared to the three months ended March 31, 2012 as a result of higher per unit sales prices.

*Exploration expense.* Exploration expense increased from \$2 million for the three months ended March 31, 2012 to \$4 million for the three months ended March 31, 2013 primarily because of an increase in the cost of unsuccessful lease acquisition efforts as we have increased the number of third-party lease brokers providing services to us in the Appalachian Basin.

*Impairment of unproved properties.* Impairment of unproved properties was approximately \$0.3 million for the three months ended March 31, 2012 compared to \$1.6 million for the three months ended March 31, 2013. The increase in impairment charges was due to an increase in expiring acreage and ongoing evaluation of our undeveloped Marcellus acreage. We charge impairment expense for expired or soon-to-be-expired leases when we determine they are impaired through lack of drilling activities or based on other factors, such as remaining lease terms, reservoir performance, commodity price outlooks, or future plans to develop the acreage and recognize impairment costs accordingly.

*DD&A.* DD&A increased from \$16 million for the three months ended March 31, 2012 to \$40 million for the three months ended March 31, 2013, primarily because of increased production. DD&A per Mcfe increased by 18% from \$1.00 per Mcfe during the three months ended March 31, 2012 to \$1.18 per Mcfe during the three months ended March 31, 2013, as a result of increased depreciation on gathering systems and facilities and increased proved property costs subject to depletion.

We evaluate the impairment of our proved natural gas and oil properties on a field-by-field basis whenever events or changes in circumstances indicate that a property's carrying amount may not be recoverable. If the carrying amount exceeds the estimated undiscounted future cash flows, we reduce the carrying amount of the oil and gas properties to their estimated fair value. No impairment expenses were recorded for the three months ended March 31, 2012 or 2013 for proved properties.

*General and administrative expense.* General and administrative expense increased from \$9 million for the three months ended March 31, 2012 to \$13 million for the three months ended March 31, 2013, primarily as a result of increased staffing levels and related salary and benefits expenses and increases in legal and other general corporate expenses, all of which resulted from our growth in production levels and development activities. On a per unit basis, general and administrative expense decreased by 35%, from \$0.57 per Mcfe during the three months ended March 31, 2012 to \$0.37 per Mcfe during the three months ended March 31, 2013, primarily due to a 114% increase in production during that time. We had 150 employees as of December 31, 2012 and 163 employees as of March 31, 2013.

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*Interest expense.* Interest expense increased from \$24 million for the three months ended March 31, 2012 to \$30 million for the three months ended March 31, 2013, primarily due to the issuance of a total of \$525 million of 6.00% senior notes due 2020 during the fourth quarter of 2012 and the first quarter of 2013. Interest expense includes approximately \$1 million and \$2 million of non-cash amortization of deferred financing costs for the three months ended March 31, 2012 and 2013, respectively.

*Income tax expense.* Income tax benefit (expense) changed from deferred expense of \$198 million for the three months ended March 31, 2012 to a deferred benefit of \$30 million for the three months ended March 31, 2013. The deferred expense in 2012 resulted primarily from unrealized commodity derivative gains and a gain on sale of assets. The deferred benefit in 2013 decreases previously provided deferred tax liabilities and results from the loss incurred for financial reporting purposes for the three months ended March 31, 2013.

At December 31, 2012, we had approximately \$1.0 billion of U.S. federal net operating loss carryforwards, or NOLs, and approximately \$1.3 billion of state NOLs, which expire starting in 2024 through 2032. From time to time, there has been proposed legislation in the U.S. Congress to eliminate or limit future deductions for intangible drilling costs; such legislation could significantly affect our future taxable position if passed. The impact of any change will be recorded in the period that such legislation might be enacted.

The calculation of our tax liabilities involves uncertainties in the application of complex tax laws and regulations. We give financial statement recognition to those tax positions that we believe are more likely than not to be sustained upon examination by the Internal Revenue Service or state revenue authorities. Our financial statements included unrecognized benefits at March 31, 2013 of \$15 million that, if recognized, would result in a reduction of other long-term liabilities and an increase in noncurrent deferred tax liabilities. As of March 31, 2013, we accrued approximately \$0.2 million of interest on unrecognized tax benefits.

*Income (loss) from discontinued operations.* Income from discontinued operations for the three months ended March 31, 2012 resulted from the recasting of the revenues and direct expenses from the Piceance and Arkoma properties, which were sold during 2012, as discontinued operations. We did not reclassify any general and administrative expenses or interest expense from continuing operations to discontinued operations.

**Year Ended December 31, 2011 Compared to Year Ended December 31, 2012**

The following table sets forth selected operating data (as recast for discontinued operations) for the year ended December 31, 2011 compared to the year ended December 31, 2012:

(in thousands, except per unit data)	Year Ended December 31,		Amount of Increase (Decrease)	Percent Change
	2011	2012		
<b>Operating revenues:</b>				
Natural gas sales	\$ 195,116	\$ 259,743	\$ 64,627	33%
NGL sales	—	3,719	3,719	*
Oil sales	173	1,520	1,347	779%
Realized commodity derivative gains	49,944	178,491	128,547	257%
Unrealized commodity derivative gains	446,120	1,055	(445,065)	(100)%
Gain on sale of assets	—	291,190	291,190	*
Total operating revenues	691,353	735,718	44,365	6%
<b>Operating expenses:</b>				
Lease operating expenses	4,608	6,243	1,635	35%
Gathering, compression, processing and transportation	37,315	91,094	53,779	144%
Production taxes	11,915	20,210	8,295	70%
Exploration	4,034	14,675	10,641	264%
Impairment of unproved properties expense	4,664	12,070	7,406	159%
Depletion, depreciation and amortization	55,716	102,026	46,310	83%
Accretion of asset retirement obligations	76	101	25	33%
General and administrative expense	33,342	45,284	11,942	36%
Loss on sale of compressor station	8,700	—	(8,700)	*
Total operating expenses	160,370	291,703	131,333	82%
Operating income	530,983	444,015	(86,968)	(16)%
<b>Other income expense:</b>				
Interest expense	\$ (74,404)	\$ (97,510)	\$ (23,106)	31%
Realized and unrealized interest rate derivative losses	(94)	—	94	*
Total other expense	(74,498)	(97,510)	(23,012)	31%
Income before income taxes	456,485	346,505	(109,980)	(24)%
Income taxes expense	(185,297)	(121,229)	(64,068)	(35)%
Income from continuing operations	271,188	225,276	(45,912)	(17)%
Income (loss) from discontinued operations	121,490	(510,345)	(631,835)	*
Net income (loss) attributable to Antero equity owners	\$ 392,678	\$ (285,069)	\$ (677,747)	(173)%
EBITDAX from continuing operations(1)	\$ 160,259	\$ 284,710	\$ 124,451	78%
EBITDAX from discontinued operations(1)	180,562	149,605	(30,957)	(17)%
Total EBITDAX(1)	\$ 340,821	\$ 434,315	\$ 93,491	27%
<b>Production data:</b>				
Natural gas (Bcf)	45	87	42	93%
NGLs (MBbl)	—	71	71	*
Oil (MBbl)	2	19	17	963%
Combined (Bcfe)	45	87	42	93%
Daily combined production (MMcfe/d)	124	239	115	93%
<b>Average sales prices before effects of hedges(2):</b>				
Natural gas (per Mcf)	\$ 4.33	2.99	(1.34)	(31)%
NGLs (per Bbl)	—	52.07	52.07	*
Oil (per Bbl)	\$ 97.19	80.34	(16.85)	(17)%
Combined (per Mcfe)	\$ 4.33	3.03	(1.30)	(30)%
<b>Average realized sales prices after effects of hedges(2):</b>				
Natural gas (per Mcf)	\$ 5.44	5.05	(0.39)	(7)%
NGLs (per Bbl)	—	52.07	52.07	*
Oil (per Bbl)	\$ 97.19	80.34	(16.85)	(17)%
Combined (per Mcfe)	\$ 5.44	5.08	(0.36)	(7)%
<b>Average costs (per Mcfe):</b>				
Lease operating costs	\$ 0.10	0.07	(0.03)	(30)%
Gathering compression and transportation	\$ 0.83	1.04	0.21	25%
Production taxes	\$ 0.26	0.23	(0.03)	(12)%
Depletion depreciation amortization and accretion	\$ 1.24	1.17	(0.07)	(6)%
General and administrative	\$ 0.74	0.52	(0.22)	(30)%

(1) See "Selected Historical Consolidated Financial Data" included elsewhere in this prospectus for a definition of EBITDAX (a non-GAAP measure) and a reconciliation of EBITDAX to net income (loss).

(2) Average sales prices shown in the table reflect both of the before and after effects of our realized commodity hedging transactions. Our calculation of such after effects includes realized gains or losses on cash settlements for commodity derivatives, which do not qualify for

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hedge accounting because we do not designate or document them as hedges for accounting purposes. Oil and NGL production was converted at 6 Mcf per Bbl to calculate total Bcfe production and per Mcfe amounts. This ratio is an estimate of the equivalent energy content of the products and does not necessarily reflect their relative economic value.

\* Not meaningful or applicable.

*Natural gas, NGLs, and oil sales.* Combined revenues from production of natural gas, NGLs, and oil increased from \$195 million for the year ended December 31, 2011 to \$265 million for the year ended December 31, 2012, an increase of \$70 million, or 36%. Our production increased by 94% from 45 Bcfe in 2011 to 87 Bcfe in 2012. Increased production volumes increased revenues by \$183 million, or 93%, (calculated as the increase in year-to-year volumes times the prior year average price), and combined commodity price decreases accounted for a \$113 million, or 58% decrease in revenues (calculated as the decrease in year-to-year average combined price times current year production volumes).

*Commodity hedging activities.* To achieve more predictable cash flows and to reduce our exposure to downward price fluctuations, we enter into derivative contracts using fixed for variable swap contracts when management believes that favorable future sales prices for our natural gas production can be secured. Because we do not designate these derivatives as accounting hedges, they do not receive accounting hedge treatment, and all mark-to-market gains or losses, as well as realized gains or losses on the derivative instruments, are recognized in our results of operations. The unrealized gains and losses represent the changes in the fair value of these swap agreements as the future strip prices fluctuate from the fixed price we will receive on future production. For the years ended December 31, 2011 and 2012, our hedges resulted in realized gains of \$50 million and \$178 million, respectively. For the years ended December 31, 2011 and 2012, our hedges resulted in unrealized gains of \$446 million and \$1 million, respectively. Unrealized gains in 2011 resulted from, (i) lower commodity prices at December 31, 2011 compared to December 31, 2010 for contracts outstanding at the end of both years and, (ii) from commodity prices at December 31, 2011 being lower than commodity swap prices for new contracts entered into in 2011. Additionally, prices did not vary significantly from year-end 2011 prices.

*Gain on sale of Appalachian gathering assets.* On March 26, 2012, we closed the sale of a portion of our Marcellus Shale gathering system assets along with exclusive rights to gather and compress our gas for a 20-year period within an area of dedication, or AOD, to a joint venture owned by Crestwood Midstream Partners and Crestwood Holdings Partners LLC (together, "Crestwood") for \$375 million (subject to customary purchase price adjustments). The sale included approximately 25 miles of low pressure pipeline systems and gathering rights on 104,000 net acres held by us within a 250,000 acre AOD and had an effective date of January 1, 2012. Other third-party producers will also have access to the Crestwood system. During the first seven years of the contract, we are committed to deliver minimum volumes into the gathering systems, with certain carryback and carryforward adjustments for overages or deficiencies. We can earn up to an additional \$40 million of sale proceeds if we meet certain volume thresholds over the first three years of the contract. Crestwood is obligated to incur all future capital costs to build out gathering systems and compression facilities within the AOD to connect our wells as it executes its drilling program and has assumed the various risks and rewards of the system build-out and operations. Because we have not retained the substantial risks and rewards of ownership associated with the gathering rights and systems transferred to Crestwood, it has recognized a gain on the sale of the gathering system and gathering rights of approximately \$291 million.

*Lease operating expenses.* Lease operating expenses increased from \$5 million for the year ended December 31, 2011 to \$6 million in 2012, primarily as a result of increased production. On a per-Mcfe basis, lease operating expenses decreased by 30%, from \$0.10 per Mcfe in 2011 to \$0.07 per Mcfe in 2012 primarily because of costs increasing at a lower rate than production. Because our Appalachian Basin properties are in a relatively early stage of production, production rates are high and per unit

lease operating expenses are low. Lease operating expenses are expected to increase on a per unit basis as the properties mature and production declines on a per well basis.

*Gathering, compression, processing and transportation expense.* Gathering, compression, processing and transportation expense increased from \$37 million for the year ended December 31, 2011 to \$91 million in 2012. The increase in these expenses resulted from the increase in production, increased firm transportation commitments, and increases in third-party compression and gathering expenses as we move to outsource some of our compression and gathering activities. On a per-Mcfe basis, total gathering, compression, processing and transportation expenses increased from \$0.83 per Mcfe for 2011 to \$1.04 in 2012.

*Production tax expense.* Total production taxes increased from \$12 million for the year ended December 31, 2011 to \$20 million for the year ended December 31, 2012, primarily as a result of increased production. Production taxes as a percentage of natural gas, NGLs, and oil revenues before the effects of hedging were 6.1% for the year ended December 31, 2011 compared to 7.6% for the year ended December 31, 2012. West Virginia ad valorem taxes, which are based on the value of oil and gas reserves, accounted for the increase in the ratio of production tax expense to revenues as we increased our Appalachian reserves.

*Exploration expense.* Exploration expense increased from \$4 million for the year ended December 31, 2011 to \$15 million for the year ended December 31, 2012 primarily because of an increase in the cost of unsuccessful lease acquisition efforts as we materially increased the number of third-party lease brokers providing services to us in the Appalachian Basin.

*Impairment of unproved properties.* Impairment of unproved properties was approximately \$5 million for the year ended December 31, 2011 compared to \$12 million for the year ended December 31, 2012. The increase in impairment charges was due to an increase in expiring acreage and ongoing evaluation of our undeveloped Marcellus acreage. We charge impairment expense for expired or soon-to-be expired leases when we determine they are impaired through lack of drilling activities or based on other factors, such as remaining lease terms, reservoir performance, commodity price outlooks or future plans to develop the acreage and recognize impairment costs accordingly.

*DD&A.* DD&A increased from \$56 million for the year ended December 31, 2011 to \$102 million for the year ended December 31, 2012, an increase of \$46 million, as a result of increased production in 2012 compared to 2011. DD&A per Mcfe decreased 6%, from \$1.24 per Mcfe during 2011 to \$1.17 per Mcfe during 2012 as a result of the increased proved reserves in 2012.

We evaluate the impairment of our proved natural gas, NGLs, and oil properties on a field-by-field basis whenever events or changes in circumstances indicate that a property's carrying amount may not be recoverable. If the carrying amount exceeds the estimated undiscounted future cash flows, we reduce the carrying amount of the oil and gas properties to their estimated fair value. There were no impairment expenses recorded for the years ended December 31, 2011 or 2012 for proved properties. As of December 31, 2012, no significant exploratory well costs had been deferred for over one year pending proved reserves determination.

*General and administrative expense.* General and administrative expense increased from \$33 million for the year ended December 31, 2011 to \$45 million during 2012, an increase of \$12 million. The increase is due to increased costs related to salaries, employee benefits, contract personnel and other general business expenses required to support the growth of our capital expenditure program and production levels. The number of our full-time employees grew from 107 at December 31, 2011 to 150 at December 31, 2012. On a per-Mcfe basis, general and administrative expense decreased by 30%, from \$0.74 per Mcfe during the year ended December 31, 2011 to \$0.52 per Mcfe during 2012 primarily due to a 93% growth in production. No portion of general and

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administrative expenses was allocated to discontinued operations as we do not expect any reduction of such expenses as a result of the sale of the Arkoma and Piceance properties. When all discontinued operations are included, general and administrative expenses were \$0.37 per Mcfe for both 2011 and 2012.

*Interest expense and realized and unrealized gains and losses on interest rate derivatives.* Interest expense increased from \$74 million for the year ended December 31, 2011 to \$98 million for the year ended December 31, 2012, an increase of \$24 million as a result of an increase in the amount of senior notes outstanding during 2012 compared to during 2011.

*Income tax expense.* For each tax year-end through December 31, 2011, Antero Resources LLC and each of its subsidiaries filed separate federal and state income tax returns. Antero Resources LLC is a partnership for income tax purposes and therefore is not subject to federal or state income taxes. The tax on the income of Antero Resources LLC is borne by its individual members through the allocation of taxable income. In October 2012, we completed a reorganization of its legal structure by contributing all of the outstanding shares owned by Antero Resources LLC in each of the Antero Arkoma, Antero Piceance, and Antero Pipeline corporations to Antero Appalachian. Antero Arkoma, Antero Piceance, and Antero Pipeline were then converted to limited liability companies. As a result, for income tax purposes, the operations from the date of the reorganizations and tax attributes of Arkoma, Piceance and Pipeline are now combined with Antero Appalachian for tax reporting purposes.

Income tax expense related to continuing operations was \$121 million in 2012 compared to \$185 million in 2011. Although we have accrued \$15 million at December 31, 2012 for unrecognized tax benefits, no taxes are due at the end of either December 31, 2011 or 2012. We have not generated current taxable income in either the current or prior years, which is primarily attributable to the differing book and tax treatment of unrealized derivative gains and intangible drilling costs. At December 31, 2012, we had approximately \$1.0 billion of U.S. Federal net operating loss carryforwards, or NOLs, and approximately \$1.3 billion of state NOLs, which expire starting in 2024 and through 2032. At December 31, 2012, we recorded valuation allowances of approximately \$48 million for deferred tax assets primarily related to capital loss and state loss carryforwards. From time to time there has been proposed legislation in the U.S. Congress to eliminate or limit future deductions for intangible drilling costs; such legislation could significantly affect our future taxable position if passed. The impact of any change will be recorded in the period that such legislation might be enacted.

The calculation of our tax liabilities involves uncertainties in the application of complex tax laws and regulations. We give financial statement recognition to those tax positions that we believe are more-likely-than-not to be sustained upon examination by the Internal Revenue Service or state revenue authorities. The financial statements include unrecognized benefits at December 31, 2012 of \$15 million that, if recognized, would result in a reduction of current income taxes payable and an increase in noncurrent deferred tax liabilities. No impact to our 2012 effective tax rate would result. As of December 31, 2012, no interest or penalties have been accrued on unrecognized tax benefits. We had no unrecognized tax benefits at December 31, 2010 or 2011.

*Income (loss) from discontinued operations.* Income (loss) from discontinued operations includes the results of operations from the Arkoma Basin and Piceance Basin operations (including revenues and direct operating expenses and allocated income tax expense, but not general and administrative or interest expenses) and, in 2012, the loss on the sale of these assets. A detailed analysis of these operations is included in note 3 to the consolidated financial statements included elsewhere in this prospectus. Income (loss) from discontinued operations decreased from income of \$121 million in 2011 to a loss of \$510 million in 2012, primarily as a result of the loss on the sale of the properties of \$796 million and a \$273 million tax benefit from the loss.

**Year Ended December 31, 2010 Compared to Year Ended December 31, 2011**

The following table sets forth selected operating data (as recast for discontinued operations) for the year ended December 31, 2010 compared to the year ended December 31, 2011:

(in thousands, except per unit data)	Year Ended December 31,			
	2010	2011	Amount of Increase (Decrease)	Percent Change
<b>Operating revenues:</b>				
Natural gas sales	\$ 47,392	\$ 195,116	\$ 147,724	312%
Oil sales	39	173	134	344%
Realized commodity derivative gains	15,063	49,944	34,881	232%
Unrealized commodity derivative gains	62,536	446,120	383,584	613%
Total operating revenues	125,030	691,353	566,323	453%
<b>Operating expenses:</b>				
Lease operating expenses	1,158	4,608	3,450	298%
Gathering, compression, processing and transportation	9,237	37,315	28,078	304%
Production taxes	2,885	11,915	9,030	313%
Exploration expenses	2,350	4,034	1,684	72%
Impairment of unproved properties	6,076	4,664	(1,412)	(23)%
Depletion, depreciation and amortization	18,522	55,716	37,194	201%
Accretion of asset retirement obligations	11	76	65	591%
Expenses related to acquisition of business	2,544	—	(2,544)	*
General and administrative	21,952	33,342	11,390	52%
Loss on sale of compressor station	—	8,700	8,700	*
Total operating expenses	64,735	160,370	95,635	148%
Operating income	60,295	530,983	470,688	781%
<b>Other expense:</b>				
Interest expense	(56,463)	(74,404)	17,941	32%
Realized and unrealized interest rate derivative losses	(2,677)	(94)	(2,583)	(96)%
Total other expense	(59,140)	(74,498)	15,358	26%
Income before income taxes	1,155	456,485	455,330	*
Income tax expense	(939)	(185,297)	(184,358)	*
Income (loss) from continuing operations	216	271,188	270,972	*
Income from discontinued operations	228,412	121,490	(106,922)	(47)%
Net income attributable to Antero equity owners	\$ 228,628	\$ 392,678	\$ 164,050	72%
EBITDAX from continuing operations(1)	\$ 27,824	\$ 160,259	\$ 132,435	476%
EBITDAX from discontinued operations(1)	169,854	180,562	10,708	6%
Total EBITDAX(1)	\$ 197,678	\$ 340,821	\$ 143,143	72%
<b>Production data:</b>				
Natural gas (Bcf)	11	45	34	317%
Oil (MBbl)	—	2	2	*
Combined (Bcfe)	11	45	34	317%
Daily combined production (MMcfe/d)	30	124	94	317%
<b>Average sales prices before effects of hedges(2):</b>				
Natural gas (per Mcf)	\$ 4.39	\$ 4.33	\$ (0.06)	(1)%
Oil (per Bbl)	—	\$ 97.19	*	*
Combined (per Mcfe)	\$ 4.39	\$ 4.33	\$ (0.06)	(1)%
<b>Average realized sales prices after effects of hedges(2):</b>				
Natural gas (per Mcf)	\$ 5.78	\$ 5.44	\$ (0.34)	(6)%
Oil (per Bbl)	—	\$ 97.19	*	*
Combined (per Mcfe)	\$ 5.78	\$ 5.44	\$ (0.34)	(6)%
<b>Average costs (per Mcfe)(2):</b>				
Lease operating costs	\$ 0.11	\$ 0.10	\$ (0.01)	(9)%
Gathering, compression, processing and transportation	\$ 0.85	\$ 0.83	\$ (0.02)	(2)%
Production taxes	\$ 0.27	\$ 0.26	\$ (0.01)	(4)%
Depletion, depreciation and amortization	\$ 1.71	\$ 1.24	\$ (0.47)	(27)%
General and administrative	\$ 2.03	\$ 0.74	\$ (1.29)	(64)%

(1) See "Selected Historical Consolidated Financial Data" included elsewhere in this prospectus for a definition of EBITDAX (a non-GAAP measure) and a reconciliation of EBITDAX to net income (loss).

(2) Average sales prices shown in the table reflect both of the before and after effects of our realized commodity hedging transactions. Our calculation of such after effects includes realized gains or losses on cash settlements for commodity derivatives, which do not



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qualify for hedge accounting because we do not designate or document them as hedges. Oil and NGL production was converted at 6 Mcf per Bbl to calculate total Bcfe production and per Mcfe amounts. This ratio is an estimate of the equivalent energy content of the products and does not necessarily reflect their relative economic value.

\* Not meaningful or applicable.

*Natural gas, NGLs, and oil sales.* Revenues from production of natural gas, NGLs, and oil increased from \$47 million for the year ended December 31, 2010 to \$195 million for the year ended December 31, 2011, an increase of \$148 million or 312%. Our production increased by 317% from 11 Bcfe in 2010 to 45 Bcfe in 2011. The net increase in revenues resulted from production volume increases reduced by commodity price decreases. Production increases accounted for a \$150 million, or 317%, increase in revenues (calculated as the increase in year-to-year volumes times the prior year average price). Price decreases accounted for a \$2 million, or 5%, decrease in revenues (calculated as the decrease in year-to-year average price times current year production volumes).

*Commodity hedging activities.* To achieve more predictable cash flows and to reduce our exposure to downward price fluctuations, we enter into derivative contracts using fixed for variable swap contracts when management believes that favorable future sales prices for our natural gas production can be secured. Because we do not designate these derivatives as accounting hedges, they do not receive accounting hedge treatment and all mark-to-market gains or losses, as well as realized gains or losses on the derivative instruments, are recognized in our results of operations. The unrealized gains and losses represent the changes in the fair value of these swap agreements as the future strip prices fluctuate from the fixed price we will receive on future production. For the years ended December 31, 2010 and 2011, our hedges resulted in realized gains of \$15 million and \$50 million, respectively. For the years ended December 31, 2010 and 2011, our hedges resulted in unrealized gains of \$63 million and \$446 million, respectively. The increase in unrealized gains from 2010 to 2011 resulted primarily from the decrease in natural gas prices.

*Lease operating expenses.* Lease operating expenses increased from \$1 million for the year ended December 31, 2010 to \$5 million in 2011, an increase of \$4 million, as a result of a 317% increase in production.

*Gathering, compression, processing and transportation expense.* Gathering, compression, processing and transportation expense increased from \$9 million for the year ended December 31, 2010 to \$37 million in 2011 because of the increase in production and increased firm transportation commitments. On a per-Mcfe basis, these expenses decreased slightly from \$0.85 per Mcfe for 2010 to \$0.83 per Mcfe for 2011.

*Production tax expense.* Total production taxes increased from \$3 million for the year ended December 31, 2010 to \$12 million for the year ended December 31, 2011, as a result of increased production. Production taxes as a percentage of natural gas and oil revenues before the effects of hedging were 6.1% in both years.

*Exploration expense.* Exploration expense increased from \$2 million for the year ended December 31, 2010 to \$4 million for the year ended December 31, 2011, primarily because of an increase in the cost of unsuccessful lease acquisition efforts as we materially increased the number of third-party lease brokers providing services to us in the Appalachian Basin.

*Impairment of unproved properties.* We abandon expired or soon to be expired leases when we determine they are impaired through lack of drilling activities or based on other factors, such as short remaining lease terms, reservoir performance, commodity price outlooks or future plans to develop the acreage and recognize impairment costs accordingly. Our impairment of unproved property expense decreased from \$6 million for the year ended December 31, 2010 to \$5 million for the year ended December 31, 2011.



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*DD&A.* DD&A increased from \$19 million for the year ended December 31, 2010 to \$56 million for the year ended December 31, 2011, an increase of \$37 million as a result of increased production. DD&A per Mcfe decreased from \$1.71 per Mcfe to \$1.24 per Mcfe, primarily as a result of increased reserve volumes in 2011 compared to 2010. As a successful efforts company, we evaluate the impairment of our proved natural gas, NGLs, and oil properties on a field-by-field basis whenever events or changes in circumstances indicate that a property's carrying amount may not be recoverable. If the carrying amount exceeds the estimated undiscounted future cash flows, we reduce the carrying amount of the oil and gas properties to their estimated fair value. There were no impairment expenses recorded for the years ended December 31, 2010 or 2011 for proved properties. As of December 31, 2011, no significant well costs had been deferred for over one year pending proved reserves determination.

*General and administrative expense.* General and administrative expense increased from \$22 million for the year ended December 31, 2010 to \$33 million for 2011, an increase of \$11 million. The increase is primarily due to increased costs related to salaries, employee benefits, contract personnel and professional services expenses for additional personnel required for our capital expenditure program and production levels. On a per-Mcfe basis, general and administrative expense decreased from \$2.03 per Mcfe for the year ended December 31, 2010 to \$0.74 per Mcfe for 2011. No portion of general and administrative expenses was allocated to discontinued operations as we do not expect any reduction of such expenses as a result of the sale of the Arkoma and Piceance properties. When all discontinued operations are included, general and administrative expenses decreased from \$0.47 per Mcfe in 2010 to \$0.37 per Mcfe in 2011.

*Interest expense and realized and unrealized gains and losses on interest rate derivatives.* Interest expense increased from \$56 million for the year ended December 31, 2010 to \$74 million for 2011, an increase of \$18 million, primarily as a result of increased borrowings on the credit facility and the issuance of \$400 million of 7.25% senior notes in August 2011. We had entered into variable-to-fixed interest rate swap agreements that hedged our exposure to interest rate variations on our credit facility and second lien term loan facility. At December 31, 2010, one of these swaps remained outstanding with a notional amount of \$225.0 million and a fixed pay rate of 4.11%. This swap expired in July 2011. For the year ended December 31, 2010, we realized a loss on interest rate swap agreements of \$10 million, whereas in 2011 we had a realized loss on interest rate swap agreements of \$4 million. There were no outstanding interest rate swap agreements at December 31, 2011.

*Income tax expense.* Income tax expense related to continuing operations was \$185 million in 2011 compared to \$1 million in 2010 and is entirely comprised of deferred taxes in both years. In general, we have not generated current taxable income in either the current or prior years, which is primarily attributable to the differing book and tax treatment of unrealized derivative gains and intangible drilling costs. Each of our operating subsidiaries filed separate federal and state tax returns in 2010 and 2011; therefore, our provision for income taxes for those years consists of the sum of our provisions for each of the operating entities. From time to time there has been proposed legislation in the U.S. Congress to eliminate or limit future deductions for intangible drilling costs and could significantly affect our future taxable position. The impact of any change will be recorded in the period that such legislation might be enacted.

*Income from discontinued operations.* Income from discontinued operations includes the results of operations from the Arkoma Basin and Piceance Basin operations (including revenues and direct operating expenses and allocated income tax expense, but not general and administrative or interest expenses). A detailed analysis of these operations is included in note 3 to the consolidated financial statements included elsewhere in this prospectus. Income from discontinued operations decreased from income of \$228 million in 2010 to income of \$121 million in 2011, primarily as a result of a nonrecurring gain of \$148 million recognized in 2010 on the sale of our Arkoma midstream assets.

## Capital Resources and Liquidity

Historically, our primary sources of liquidity have been through issuances of debt securities, borrowings under our credit facility, asset sales, and net cash provided by operating activities. Our primary use of cash has been for the exploration, development and acquisition of natural gas, NGLs, and oil properties. As we pursue reserve and production growth, we continually monitor what capital resources, including equity and debt financings, are available to meet our future financial obligations, planned capital expenditure activities and liquidity requirements. Our future success in growing proved reserves and production will be highly dependent on the capital resources available to us. As of June 30, 2013, we had 4,576 identified potential horizontal well locations, which will take many years to develop. Additionally our proved undeveloped reserves will require an estimated \$4.6 billion of development capital over the next five years. A significant portion of this capital requirement will be funded out of operating cash flows. However, we may be required to generate or raise significant capital to conduct drilling activities on these identified potential well locations and to finance the development of our proved undeveloped reserves.

During 2012, we raised capital through the issuance of \$300 million of 6.00% senior notes due 2020, and in February 2013 we issued another \$225 million of the 6.00% senior notes. During 2012, we also sold various properties for which we received cash proceeds of approximately \$1.2 billion.

As of May 9, 2013, our credit facility was amended to increase the borrowing base from \$1.22 billion to a maximum of \$1.75 billion and lender commitments were increased from \$700 million to \$1.2 billion. We sought this amendment in order to fund our 2013 capital budget and to amend certain covenants. Current lender commitments can be increased to the full \$1.75 billion borrowing base upon approval of the lending bank group. The borrowing base is determined every six months based on reserves, oil and gas commodity prices, and the value of our hedge portfolio. The next redetermination of the borrowing base is scheduled to occur in October 2013. Our commodity hedge position provides us with additional liquidity as it provides us with the relative certainty of receiving a significant portion of our future expected revenues from operations despite potential declines in the price of natural gas. Our ability to make significant additional acquisitions for cash would require us to obtain additional equity or debt financing, which we may not be able to obtain on terms acceptable to us, or at all. Our credit facility is funded by a syndicate of 16 banks. We believe that the participants in the syndicate have the capability to fund up to their current commitment. If one or more banks should not be able to do so, we may not have the full availability of our credit facility.

For the year ended December 31, 2012, our capital expenditures were approximately \$1.68 billion for drilling, leasehold acquisitions, and gathering. Our capital budget for 2013 is \$1.95 billion, including \$1.20 billion for drilling and completion, \$250 million for leasehold acquisitions, and \$500 million for the construction of water handling infrastructure and gas gathering pipelines and facilities. As of March 31, 2013, we had spent approximately \$548 million of our 2013 capital budget. Our capital budget excludes acquisitions. Substantially all of the \$1.20 billion allocated for drilling and completion is allocated to our operated drilling in rich gas areas. Approximately 85% of the drilling and completion budget is allocated to the Marcellus Shale, and the remaining 15% is allocated to the Utica Shale. During 2013, we plan to operate an average of 15 drilling rigs in the Marcellus Shale and two drilling rigs in the Utica Shale. Consistent with our historical practice, we periodically review our capital expenditures and adjust our budget and its allocation based on liquidity, drilling results and commodity prices.

After the completion of this offering and the increase in lender commitments under our credit facility on May 9, 2013, together with our operating cash flow and hedging program, we believe we will have the financial flexibility to meet our cash requirements, including normal operating needs, and pursue our currently planned 2013 and 2014 delineation and development drilling activities.

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For more information on our outstanding indebtedness, see "—Debt Agreements and Contractual Obligations."

### Cash Flows

The following table summarizes our cash flows for the years ended December 31, 2010, 2011 and 2012 and for the three months ended March 31, 2012 and 2013 (including discontinued operations):

	Year Ended December 31,			Three Months Ended March 31,	
	2010	2011	2012 (in thousands)	2012	2013
Net cash provided by operating activities	\$ 127,791	\$ 266,307	\$ 332,255	\$ 100,491	\$ 110,207
Net cash provided by (used in) investing activities	(230,672)	(901,249)	(463,491)	124,699	(547,885)
Net cash provided by (used in) financing activities	101,200	629,297	146,882	(222,040)	423,495
Net increase (decrease) in cash and cash equivalents	\$ (1,681)	\$ (5,645)	\$ 15,646	\$ 3,150	\$ (14,183)

#### *Cash Flow Provided by Operating Activities*

Net cash provided by operating activities was \$100 million and \$110 million for the three months ended March 31, 2012 and 2013, respectively. The increase in cash flow from operations for the three months ended March 31, 2013 compared to the three months ended March 31, 2012 was primarily the result of increased production volumes and revenues (including derivative settlements), net of the increase in cash operating costs, interest expense, and changes in working capital levels.

Net cash provided by operating activities was \$128 million, \$266 million and \$332 million for the years ended December 31, 2010, 2011 and 2012, respectively. The increase in cash flows from operations for 2010 to 2011 and also from 2011 to 2012 was primarily the result of increased oil and gas production volumes and realized gains from commodity hedges, net of increased operating expenses and interest expense and changes in working capital.

Our operating cash flow is sensitive to many variables, the most significant of which is the volatility of prices for natural gas, NGLs, and oil prices. Prices for these commodities are determined primarily by prevailing market conditions. Factors including regional and worldwide economic activity, weather, infrastructure capacity to reach markets, and other variables influence market conditions for these products. These factors are beyond our control and are difficult to predict. For additional information on the impact of changing prices on our financial position, see "—Quantitative and Qualitative Disclosures About Market Risk."

#### *Cash Flow From (Used in) Investing Activities*

During the three months ended March 31, 2013, we used cash totaling \$548 million in investing activities, including \$149 million of undeveloped leasehold acquisitions, \$344 million of drilling costs, and \$56 million of expenditures for gathering systems and facilities. During the three months ended March 31, 2012, we had positive cash flows from investing activities of \$125 million as a result of proceeds realized from the sale of certain Marcellus gathering systems and rights of \$377 million, partially offset by \$252 million in land acquisitions, drilling and development, and gathering systems.

During the years ended December 31, 2010, 2011 and 2012, we used cash flows in investing activities of \$231 million, \$901 million and \$463 million, respectively, as a result of our capital expenditures for drilling, development and acquisitions. During 2012 we spent approximately

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\$1.7 billion on investments in undeveloped leaseholds, development costs and gathering systems. Net cash flow used in investing activities was reduced by realized cash proceeds of approximately \$1.2 billion from the sale of the Piceance Basin, Arkoma Basin, and certain Appalachian gathering systems. The increase in cash flows used in investing activities in 2011 from 2010 resulted primarily from increased drilling and acquisition activities in the Marcellus Shale. In September 2011, we also acquired a 7% overriding royalty interest related to 115,000 net acres operated by us in the core of our West Virginia and Pennsylvania Marcellus acreage position for \$193 million.

Our board of directors has approved a capital budget of up to \$1.95 billion for 2013. Our capital budget may be adjusted as business conditions warrant. The amount, timing and allocation of capital expenditures is largely discretionary and within our control. If natural gas, NGLs, and oil prices decline to levels below our acceptable levels or costs increase to levels above our acceptable levels, we could choose to defer a significant portion of our budgeted capital expenditures until later periods to achieve the desired balance between sources and uses of liquidity and prioritize capital projects that we believe have the highest expected returns and potential to generate near-term cash flow. We routinely monitor and adjust our capital expenditures in response to changes in prices, availability of financing, drilling and acquisition costs, industry conditions, the timing of regulatory approvals, the availability of rigs, success or lack of success in drilling activities, contractual obligations, internally generated cash flow and other factors both within and outside our control.

### ***Cash Flow Provided by (Used in) Financing Activities***

Net cash provided by financing activities for the three months ended March 31, 2013 resulted from the issuance of an additional \$225 million of our 6.00% senior notes for net proceeds of approximately \$232 million in February 2013, \$187 million of net additional borrowings under our credit facility (net of payments of deferred financing costs on the issuance of the senior notes of \$3.0 million) and other items of \$8 million. Net cash used in financing activities of \$222 million during the three months ended March 31, 2012 resulted from a repayment of borrowings under our credit facility using the proceeds of the sale of our Marcellus gathering systems, net of additional borrowings.

Net cash provided by financing activities in 2012 of \$147 million was primarily the result of (i) \$300 million of cash provided by the issuance of senior notes, net of (ii) net repayments of the credit facility of \$148 million and other items of \$5 million including deferred financing costs.

Net cash provided by financing activities in 2011 of \$629 million was primarily the result of (i) \$400 million of cash provided by the issuance of senior notes, (ii) net borrowings of \$265 million on our credit facility, net of (iii) cash outflows for \$7 million of deferred financing costs, and a \$29 million distribution to equity members for tax liabilities.

Net cash provided by financing activities in 2010 of \$101 million was primarily a result of (i) \$156 million of cash provided by the issuance of senior notes, (ii) net payments of \$42 million on our credit facility, and (iii) \$13 million of other payment items including deferred financing costs.

### **Debt Agreements and Contractual Obligations**

#### *Senior Secured Revolving Credit Facility.*

Our credit facility was amended as of May 9, 2013 to provide for a maximum borrowing base of \$1.75 billion and lender commitments of \$1.2 billion. The borrowing base is redetermined semiannually and depends on the volumes of our proved oil and gas reserves and estimated cash flows from these reserves and our commodity hedge positions. The next redetermination is scheduled to occur in October 2013. As of March 31, 2013, the borrowing base was \$1.22 billion and lender commitments totaled \$700 million. At March 31, 2013, we had \$404 million of borrowings and \$32 million of letters of credit outstanding under the credit facility. At December 31, 2012, we had \$217 million of

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borrowings and \$43 million of letters of credit outstanding under the credit facility. The credit facility matures in May 2016.

Principal amounts borrowed are payable on the maturity date with such borrowings bearing interest that is payable quarterly. We have a choice of borrowing in Eurodollars or at the base rate. Eurodollar loans bear interest at a rate per annum equal to the rate appearing on the Reuters BBA Libor Rates Page 3750 for one, two, three, six or twelve months plus an applicable margin ranging from 150 to 250 basis points, depending on the percentage of our borrowing base utilized. Base rate loans bear interest at a rate per annum equal to the greatest of (i) the agent bank's reference rate, (ii) the federal funds effective rate plus 50 basis points and (iii) the rate for one month Eurodollar loans plus 100 basis points, plus an applicable margin ranging from 50 to 150 basis points, depending on the percentage of our borrowing base utilized.

The credit facility is secured by mortgages on substantially all of our properties and guarantees from our subsidiaries. Interest is payable at a variable rate based on LIBOR or the prime rate based on our election at the time of borrowing. As of March 31, 2012 and 2013, borrowings and letters of credit outstanding under our credit facility had a weighted average interest rate of 2.2% and 2.5%, respectively. The credit facility contains restrictive covenants that may limit our ability to, among other things:

- incur additional indebtedness;
- sell assets;
- make loans to others;
- make investments;
- enter into mergers;
- make certain payments to Antero Resources LLC;
- hedge future production;
- incur liens; and
- engage in certain other transactions without the prior consent of the lenders.

The credit facility, as amended, also requires us to maintain the following two financial ratios:

- a current ratio, which is the ratio of our consolidated current assets (includes unused commitment under the credit facility and excludes derivative assets) to our consolidated current liabilities, of not less than 0.75 to 1.0 as of March 31, 2013 and 1.0 to 1.0 at the end of each fiscal quarter thereafter; and
- a minimum interest coverage ratio, which is the ratio of consolidated EBITDAX to consolidated interest expense, of not less than 2.5 to 1.0.

We were in compliance with such covenants and ratios as of December 31, 2012 and March 31, 2013.

*Senior Notes.* We have \$525 million of 9.375% senior notes outstanding, which are due December 1, 2017. The notes were issued by Antero Resources Finance Corporation, or Antero Finance, and are unsecured and effectively subordinated to the credit facility to the extent of the value of the collateral securing the credit facility. The notes are guaranteed on a senior unsecured basis by Antero Resources LLC, all of its wholly owned subsidiaries (other than Antero Finance), and certain of its future restricted subsidiaries. Interest on the notes is payable on June 1 and December 1 of each year. Antero Finance may redeem all or part of the notes at any time on or after December 1, 2013 at redemption prices ranging from 104.688% on or after December 1, 2013 to 100.00% on or after

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December 1, 2015. At any time prior to December 1, 2013, Antero Finance may also redeem the notes, in whole or in part, at a price equal to 100% of the principal amount of the notes plus a "make-whole" premium. If Antero Resources LLC undergoes a change of control, Antero Finance may be required to repurchase all or a portion of the notes at a price equal to 101% of the principal amount of the notes, plus accrued interest.

We also have \$400 million of 7.25% senior notes outstanding, which are due August 1, 2019. The notes were issued by Antero Finance and are unsecured and effectively subordinated to the credit facility to the extent of the value of the collateral securing the credit facility. The notes rank pari passu to the existing 9.375% senior notes. The notes are guaranteed on a senior unsecured basis by Antero Resources LLC, all of its wholly owned subsidiaries (other than Antero Finance), and certain of its future restricted subsidiaries. Interest on the notes is payable on August 1 and February 1 of each year. Antero Finance may redeem all or part of the notes at any time on or after August 1, 2014 at redemption prices ranging from 105.438% on or after August 1, 2014 to 100.00% on or after August 1, 2017. In addition, on or before August 1, 2014, Antero Finance may redeem up to 35% of the aggregate principal amount of the notes with the net cash proceeds of certain equity offerings, if certain conditions are met, at a redemption price of 107.25% of the principal amount of the notes, plus accrued interest. At any time prior to August 1, 2014, Antero Finance may redeem the notes, in whole or in part, at a price equal to 100% of the principal amount of the notes plus a "make-whole" premium and accrued interest. If Antero Resources LLC undergoes a change of control, Antero Finance may be required to repurchase all or a portion of the notes at a price equal to 101% of the principal amount of the notes, plus accrued interest.

At March 31, 2013, we also had \$525 million of 6.00% senior notes outstanding, which are due December 1, 2020. The notes were issued by Antero Finance and are unsecured and effectively subordinated to the credit facility to the extent of the value of the collateral securing the credit facility. The notes rank pari passu to the existing 9.375% and 7.25% senior notes. The notes are guaranteed on a senior unsecured basis by Antero Resources LLC, all of its wholly owned subsidiaries (other than Antero Finance), and certain of its future restricted subsidiaries. Interest on the notes is payable on June 1 and December 1 of each year, commencing on June 1, 2013. Antero Finance may redeem all or part of the notes at any time on or after December 1, 2015 at redemption prices ranging from 104.50% on or after December 1, 2015 to 100.00% on or after December 1, 2018. In addition, on or before December 1, 2015, Antero Finance may redeem up to 35% of the aggregate principal amount of the notes with the net cash proceeds of certain equity offerings, if certain conditions are met, at a redemption price of 106.00% of the principal amount of the notes, plus accrued interest. At any time prior to December 1, 2015, Antero Finance may redeem the notes, in whole or in part, at a price equal to 100% of the principal amount of the notes plus a "make-whole" premium and accrued interest. If a change of control (as defined in the bond indenture) occurs at any time prior to January 1, 2014, Antero Finance may, at its option, redeem all, but not less than all, of the notes at a redemption price equal to 110% of the principal amount of the notes, plus accrued interest. If Antero Finance has not exercised its optional redemption rights upon a change of control, the note holders will have the right to require Antero Finance to repurchase all or a portion of the notes at a price equal to 101% of the principal amount of the notes, plus accrued interest.

We used the proceeds from the issuances of the senior notes to repay borrowings outstanding under our credit facility and for development of our oil and natural gas properties.

The senior notes indentures each contain restrictive covenants and restrict our ability to incur additional debt unless a pro forma minimum interest coverage ratio requirement of 2.25:1 is incurred. We were in compliance with such covenants and the coverage ratio requirement as of December 31, 2012 and March 31, 2013.

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Following the merger of Antero Resources LLC into Antero Resources Corporation, as described in "Corporate Reorganization," Antero Resources Corporation will assume the obligations of Antero Resources LLC as parent guarantor under the indentures governing our senior notes. In addition, Antero Investment will not be a guarantor under our credit facility or under the indentures governing our senior notes or otherwise subject to the restrictive covenants thereunder.

*Treasury Management Facility.* We have a stand-alone revolving note with a lender under the credit facility which provides for up to \$25 million of cash management obligations in order to facilitate our daily treasury management. Borrowings under the revolving note are secured by the collateral for the credit facility. Borrowings under the facility bear interest at the lender's prime rate plus 1.0%. The note matures on June 1, 2014. We expect that the treasury management facility will be renewed for an additional one year period when it expires. At December 31, 2012 and March 31, 2013, there were no outstanding borrowings under this facility.

*Note Payable.* We assumed a \$25 million unsecured note payable in the Bluestone Energy Partners business acquisition consummated on December 1, 2010. The note had a balance of \$25 million at December 31, 2012 and March 31, 2013, bears interest at 9%, and is due December 1, 2013. The note is not callable.

*Contractual Obligations.* A summary of our contractual obligations as of March 31, 2013 is provided in the following table. See "Business—Our Operations—Delivery Commitments" for additional information on our delivery commitments.

(in millions)	Year							Total
	1	2	3	4	5	Thereafter		
Credit facility(1)	\$ —	\$ —	\$ —	\$ 404	\$ —	\$ —	\$ 404	
Senior notes—principal(2)	25	—	—	—	525	925	1,475	
Senior notes—interest(2)	112	110	110	110	110	138	690	
Drilling rig and frac service commitments(3)	166	120	41	2	—	—	329	
Firm transportation(4)	52	103	120	119	117	850	1,361	
Gas processing, gathering, and compression service(5)	120	113	128	129	125	533	1,148	
Office and equipment leases	2	4	5	4	4	18	37	
Asset retirement obligations(6)	—	—	—	—	—	11	11	
<b>Total</b>	<b>\$ 477</b>	<b>\$ 450</b>	<b>\$ 404</b>	<b>\$ 768</b>	<b>\$ 881</b>	<b>\$ 2,475</b>	<b>\$ 5,455</b>	

- (1) Includes outstanding principal amount at March 31, 2013. This table does not include future commitment fees, interest expense, or other fees on the credit facility because they are floating-rate instruments and we cannot determine with accuracy the timing of future loan advances, repayments, or future interest rates to be charged.
- (2) Includes the 9.375% senior notes due 2017, the 7.25% senior notes due 2019, and the 6.00% senior notes issued in November 2012 and February 2013 and due 2020, and the \$25 million note due 2013 assumed in the acquisition of Bluestone Energy Partners.
- (3) At March 31, 2013, we had contracts for the services of 14 rigs which expire at various dates from 2013 through 2018. We also had two frac services contracts which expire in 2013 and 2014. The values in the table represent the gross amounts that we are committed to pay; however, we will record in our financial statements our proportionate share of costs based on our working interest.
- (4) We have entered into firm transportation agreements with various pipelines in order to facilitate the delivery of production to liquid markets. These contracts commit us to transport minimum daily natural gas or NGL volumes at a negotiated rate, or pay for any deficiencies at a specified



reservation fee rate. The amounts in this table represent our minimum daily volumes at the reservation fee rate. The values in the table represent the gross amounts that we are committed to pay; however, we will record in our financial statements our proportionate share of costs based on our working interest.

- (5) Contractual commitments for gas processing, gathering, and compression service agreements represent minimum commitments under long-term gas processing agreements as well as various gas compression agreements. The values in the table represent the gross amounts that we are committed to pay; however, we will record in our financial statements our proportionate share of costs based on our working interest.
- (6) Neither the ultimate settlement amounts nor the timing of our asset retirement obligations can be precisely determined in advance; however, we believe it is likely that a very small amount of these obligations will be settled within the next five years.

### **Critical Accounting Policies and Estimates**

The discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of our financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. Certain accounting policies involve judgments and uncertainties to such an extent that there is reasonable likelihood that materially different amounts could have been reported under different conditions, or if different assumptions had been used. We evaluate our estimates and assumptions on a regular basis. We base our estimates on historical experience and various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates and assumptions used in preparation of our consolidated financial statements. We provide expanded discussion of our more significant accounting policies, estimates and judgments below. We believe these accounting policies reflect our more significant estimates and assumptions used in preparation of our consolidated financial statements. See note 2 to the consolidated financial statements for a discussion of additional accounting policies and estimates made by management.

### ***Incentive Plan***

Employee Holdings currently holds membership interests in Antero Resources LLC and has granted profits interests to our employees. The profits interests currently have rights to participate in certain distribution events of Antero Resources LLC if sufficient valuation thresholds are met. Historically, we have accounted for this plan as a profits interests plan and did not record stock compensation expense because the satisfaction of all performance, market, and service conditions, which would only occur upon a liquidating event, was not probable.

The limited liability company agreement of Antero Investment to be adopted in connection with the closing of this offering provides a mechanism by which the shares of our common stock to be allocated amongst the members of Antero Investment, including Employee Holdings, will be determined. As a result, the satisfaction of all performance, market, and service conditions relative to the membership interests awards held by Employee Holdings will be probable. Accordingly, we will recognize a non-cash charge for stock compensation expense for the estimated fair value of the prospective distributions to Employee Holdings at the closing of this offering and over the remaining service period. We will retain an independent valuation firm to estimate the fair value of the shares to be distributed in satisfaction of the profits interests.



***Natural Gas, NGL and Oil Properties***

*Successful Efforts Method*

Our natural gas, NGL, and oil exploration and production activities are accounted for using the successful efforts method. Under this method, costs of drilling successful exploration wells and development costs are capitalized and amortized on a geological reservoir basis using the unit-of-production method as natural gas, NGL, and oil is produced. Geological and geophysical costs, delay rentals and costs to drill exploratory wells that do not discover proved reserves are expensed as exploration costs. The costs of development wells are capitalized whether productive or nonproductive. Natural gas, NGL, and oil lease acquisition costs are also capitalized. The sale of a partial interest in a proved property is accounted for as a cost recovery and no gain or loss is recognized as long as this treatment does not significantly affect the unit-of-production amortization rate. Maintenance and repairs are charged to expense, and renewals and betterments are capitalized to the appropriate property and equipment accounts.

Unproved property costs are costs related to unevaluated properties and are transferred to proved natural gas and oil properties if the properties are determined to be productive. Proceeds from sales of partial interests in unproved leases are accounted for as a recovery of cost without recognizing any gain until all costs are recovered. Unevaluated natural gas, NGL, and oil properties are assessed periodically for impairment on a property-by-property basis based on remaining lease terms, drilling results, reservoir performance, commodity price outlooks or future plans to develop acreage. If it is determined that it is probable that reserves will not be discovered, the cost of unproved leases is charged to impairment of unproved properties. During the years ended December 31, 2010, 2011 and 2012 and the three months ended March 31, 2012 and 2013, we charged impairment expense for expired or expiring leases with a cost of \$36 million, \$11 million, \$13 million, \$1 million and \$2 million, respectively. The assessment of unevaluated natural gas, NGL, and oil properties to determine any possible impairment requires managerial judgment.

The successful efforts method of accounting can have a significant impact on the operational results reported when we are entering a new exploratory area in anticipation of finding a gas and oil field that will be the focus of future development drilling activity. The initial exploratory wells may be unsuccessful and will be expensed. Seismic costs can be substantial, which will result in additional exploration expenses when incurred. Additionally, the application of the successful efforts method of accounting requires managerial judgment to determine the proper classification of wells designated as developmental or exploratory, which will ultimately determine the proper accounting treatment of the costs incurred.

*Natural Gas, NGL and Oil Reserve Quantities and Standardized Measure of Future Cash Flows*

Our independent reserve engineers and internal technical staff prepare the estimates of natural gas, NGL, and oil reserves and associated future net cash flows. Current accounting guidance allows only proved natural gas, NGL, and oil reserves to be included in our financial statement disclosures. The SEC has defined proved reserves as the estimated quantities of natural gas, NGL, and oil which geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions. Our independent reserve engineers and internal technical staff must make a number of subjective assumptions based on their professional judgment in developing reserve estimates. Reserve estimates are updated annually and consider recent production levels and other technical information about each field. Natural gas, NGL, and oil reserve engineering is a subjective process of estimating underground accumulations of natural gas, NGL, and oil that cannot be precisely measured. The accuracy of any reserve estimate is a function of the quality of available data and of engineering and geological interpretation and judgment. Periodic revisions to the estimated reserves and future cash flows may be necessary as a result of a

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number of factors, including reservoir performance, new drilling, natural gas, NGL, and oil prices, cost changes, technological advances, new geological or geophysical data, or other economic factors. Accordingly, reserve estimates are generally different from the quantities of natural gas, NGL, and oil that are ultimately recovered. We cannot predict the amounts or timing of future reserve revisions. If such revisions are significant, they could significantly affect future amortization of capitalized costs and result in impairment of assets that may be material.

### *Impairment of Proved Properties*

We review our proved natural gas, NGL, and oil properties for impairment on a geological reservoir basis whenever events and circumstances indicate that a decline in the recoverability of their carrying value may have occurred. We estimate the expected future cash flows of our gas and oil properties and compare these future cash flows to the carrying amount of the gas and oil properties to determine if the carrying amount is recoverable. If the carrying amount exceeds the estimated undiscounted future cash flows, we will adjust the carrying amount of the natural gas, NGL, and oil properties to fair value. The factors used to determine fair value are subject to our judgment and expertise and include, but are not limited to, recent sales prices of comparable properties, the present value of future cash flows, net of estimated operating and development costs using estimates of proved reserves, future commodity pricing, future production estimates, anticipated capital expenditures, and various discount rates commensurate with the risk associated with realizing the expected cash flows projected. Because of the uncertainty inherent in these factors, we cannot predict when or if future impairment charges for proved properties will be recorded. We did not record any impairment charges for proved properties in 2010, 2011 or 2012.

### **Off-Balance Sheet Arrangements**

As of March 31, 2013, we did not have any off-balance sheet arrangements other than operating leases. See "—Debt Agreements and Contractual Obligations" for commitments under operating leases, drilling rig and frac service agreements, firm transportation agreements, and gas processing and compression service agreements.

### **Quantitative and Qualitative Disclosures About Market Risk**

The primary objective of the following information is to provide forward-looking quantitative and qualitative information about our potential exposure to market risk. The term "market risk" refers to the risk of loss arising from adverse changes in natural gas, NGL, and oil prices and interest rates. The disclosures are not meant to be precise indicators of expected future losses, but rather indicators of reasonably possible losses. This forward-looking information provides indicators of how we view and manage our ongoing market risk exposures. All of our market risk sensitive instruments were entered into for hedging purposes, rather than for speculative trading.

### *Commodity Hedging Activities*

Our primary market risk exposure is in the price we receive for our natural gas and oil production. Realized pricing is primarily driven by spot regional market prices applicable to our U.S. natural gas production and the prevailing worldwide price for crude oil. Pricing for natural gas and oil production has been volatile and unpredictable for several years, and we expect this volatility to continue in the future. The prices we receive for production depend on many factors outside of our control, including volatility in the differences between product prices at sales points and the applicable index price.

To mitigate some of the potential negative impact on our cash flow caused by changes in natural gas prices, we have entered into financial commodity swap contracts to receive fixed prices for a portion of our natural gas and oil production when management believes that favorable future prices

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can be secured. We hedge part of our production at a fixed price for natural gas at our sales points (New York Mercantile Exchange ("NYMEX") less basis) to mitigate the risk of differentials to the sales point prices. Part of our production is also hedged at NYMEX prices.

Our financial hedging activities are intended to support natural gas and oil prices at targeted levels and to manage our exposure to natural gas price fluctuations. The counterparty is required to make a payment to us for the difference between the fixed price and the settlement price if the settlement price is below the fixed price. We are required to make a payment to the counterparty for the difference between the fixed price and the settlement price if the fixed price is below the settlement price. These contracts may include financial price swaps whereby we will receive a fixed price for our production and pay a variable market price to the contract counterparty and cashless price collars that set floor and ceiling prices for the hedged production. If the applicable monthly price indices are outside of the ranges set by the floor and ceiling prices in the various collars, we and the counterparty to the collars would be required to settle the difference.

At March 31, 2013, we had in place natural gas and oil swaps covering portions of our projected production from 2013 through 2018. Our commodity hedge position as of March 31, 2013 is summarized in note 8 to our consolidated financial statements included elsewhere herein. Our financial hedging activities are intended to support natural gas, NGL, and oil prices at targeted levels and to manage our exposure to natural gas price fluctuations. Our credit facility allows us to hedge up to 85% of our estimated production from proved reserves for up to 12 months in the future, 80% for 13 to 24 months in the future, 75% for 25 to 36 months in the future, 70% for 37 to 48 months in the future, 65% for 49 to 60 months in the future, and 65% of production for 2018. Based on our annual production and our fixed price swap contracts in place during 2013, our income before taxes for the three months ended March 31, 2013 would have decreased by approximately \$0.4 million for each \$0.10 decrease per MMBtu in natural gas prices.

All derivative instruments, other than those that meet the normal purchase and normal sales exception as mentioned above, are recorded at fair market value in accordance with U.S. GAAP and are included in the condensed consolidated balance sheets as assets or liabilities. Fair values are adjusted for non-performance risk. Because we do not designate these hedges as accounting hedges, we do not receive accounting hedge treatment and all mark-to-market gains or losses as well as realized gains or losses on the derivative instruments are recognized in our results of operations. We present realized and unrealized gains or losses on commodity derivatives in our operating revenues as "Realized and unrealized gains (losses) on commodity derivative instruments."

Mark-to-market adjustments of derivative instruments produce earnings volatility but have no cash flow impact relative to changes in market prices until the derivative contracts are settled. We expect continued volatility in the fair value of our derivative instruments. Our cash flow is only impacted when the underlying physical sales transaction takes place in the future and when the associated derivative instrument contract is settled by making or receiving a payment to or from the counterparty. At March 31, 2013 and December 31, 2012, the estimated fair value of our commodity derivative instruments was a net asset of \$412 million and \$532 million, respectively, comprised of current and noncurrent assets and current liabilities. None of these commodity derivative instruments were entered into for trading or speculative purposes.

By removing price volatility from a portion of our expected natural gas production through December 2016, we have mitigated, but not eliminated, the potential effects of changing prices on our operating cash flow for those periods. While mitigating negative effects of falling commodity prices, these derivative contracts also limit the benefits we would receive from increases in commodity prices.

***Interest Rate Risks***

Our primary exposure to interest rate risk results from outstanding borrowings under our credit facility, which has a floating interest rate. The average annual interest rate incurred on this indebtedness for the three months ended March 31, 2013 was approximately 2.0%. A 1.0% increase in each of the average LIBOR rate and federal funds rate for the three months ended March 31, 2013 would have resulted in an estimated \$0.7 million increase in interest expense for that period. We had no outstanding interest rate derivatives for hedging purposes at March 31, 2013.

***Counterparty and Customer Credit Risk***

Our principal exposures to credit risk are through receivables resulting from commodity derivatives contracts (\$412 million at March 31, 2013) and the sale of our oil and gas production (\$53 million at March 31, 2013), which we market to energy companies.

By using derivative instruments that are not traded on an exchange to hedge exposures to changes in commodity prices, we expose ourselves to the credit risk of our counterparties. Credit risk is the potential failure of the counterparty to perform under the terms of the derivative contract. When the fair value of a derivative contract is positive, the counterparty is expected to owe us, which creates credit risk. To minimize the credit risk in derivative instruments, it is our policy to enter into derivative contracts only with counterparties that are creditworthy financial institutions deemed by management as competent and competitive market-makers. The creditworthiness of our counterparties is subject to periodic review. We have economic hedges in place with eleven different counterparties, all but one of which is a lender under our credit facility. The fair value of our commodity derivative contracts of approximately \$412 million at March 31, 2013 includes the following values by bank counterparty: BNP Paribas—\$114 million; Credit Suisse—\$105 million; Wells Fargo—\$64 million; JP Morgan—\$75 million; Barclays—\$46 million; Deutsche Bank—\$8 million; Union Bank—\$1 million; Citigroup—\$(2) million; Toronto Dominion Bank—\$(2) million; and KeyBank—\$(1) million. Additionally, contracts with Dominion Field Services account for \$4 million of the fair value. The credit ratings of certain of these banks were downgraded in 2011 because of the sovereign debt crisis in Europe. The estimated fair value of our commodity derivative assets has been risk adjusted using a discount rate based upon the respective published credit default swap rates (if available or, if not available, a discount rate based on the applicable Reuters bond rating) at March 31, 2013 for each of the European and American banks. We believe that all of these institutions currently are acceptable credit risks. Other than as provided by the credit facility, we are not required to provide credit support or collateral to any of our counterparties under our contracts, nor are they required to provide credit support to us. As of March 31, 2013, we did not have past-due receivables from or payables to any of our counterparties.

We are also subject to credit risk due to concentration of our natural gas receivables with several significant customers. We do not require our customers to post collateral. The inability or failure of our significant customers to meet their obligations to us or their insolvency or liquidation may adversely affect our financial results.

## BUSINESS

### Our Company

We are an independent natural gas and oil company engaged in the exploitation, development and acquisition of natural gas, NGLs and oil properties located in the Appalachian Basin in West Virginia, Ohio and Pennsylvania. We are focused on creating shareholder value through the development of our large portfolio of repeatable, low cost, liquids-rich drilling opportunities in two of the premier North American shale plays. We currently hold approximately 320,000 net acres in the southwestern core of the Marcellus Shale and approximately 100,000 net acres in the core of the Utica Shale. In addition, we estimate that approximately 170,000 net acres of our Marcellus Shale leasehold are prospective for the slightly shallower Upper Devonian Shale. As of June 30, 2013, our estimated proved, probable and possible reserves were 6.3 Tcfe, 14.0 Tcfe and 7.4 Tcfe, respectively, and our proved reserves were 23% proved developed and 91% natural gas. As of June 30, 2013, our drilling inventory consisted of 4,576 identified potential horizontal well locations, approximately 82% of which are liquids-rich drilling opportunities.

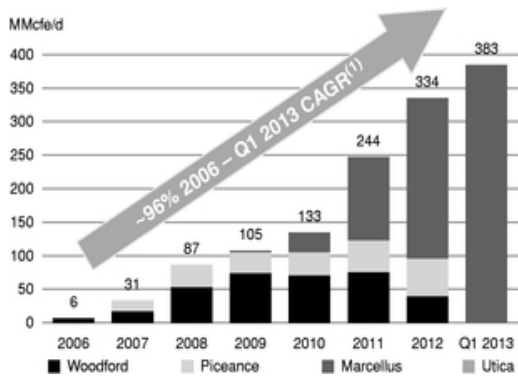
Our management team has a proven track record of implementing geologically driven growth strategies in some of the most prominent unconventional play types across the United States, including the Barnett, Woodford, Marcellus and Utica Shales. Paul Rady, our Chairman and Chief Executive Officer, and Glen Warren, our President and Chief Financial Officer, founded our business in 2002. The majority of our management team has worked together at various times for over 30 years at Amoco Production Company, Barrett Resources Corporation, Pennaco Energy Inc. and Antero Resources. Our management team has created significant shareholder value through various past ventures, including the sale of two unconventional resource-focused upstream companies and one midstream company in the last 15 years.

We have been successful in targeting large, repeatable resource plays where horizontal drilling and advanced fracture stimulation technologies provide the means to economically develop and produce natural gas, NGLs and oil from unconventional formations. We have been early adopters of innovative hydraulic fracturing and completion techniques, having drilled over 400 horizontal wells in the Barnett, Woodford, Marcellus and Utica Shales. As a result of our horizontal drilling and completion expertise, and the predictable geologic structure throughout our largely contiguous land position in the southwestern core of the Marcellus Shale, we have drilled approximately 1.3 million lateral feet without encountering any faulting in our target zone. We have drilled and completed 170 horizontal wells in the Marcellus Shale with a 100% success rate to date. With 15 rigs running, we are currently the most active driller in the Marcellus Shale based on information from RigData. We have begun to apply the expertise and approach we employ in the Marcellus Shale to the Utica Shale, and we believe we will be able to achieve similar success. We have drilled and completed eight horizontal wells in the Utica Shale with a 100% success rate without encountering any faulting.

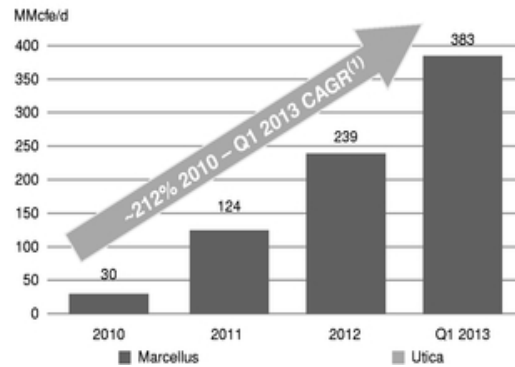
Our net daily production in the first quarter of 2013 averaged 383 MMcfe/d, including 2,392 Bbls/d of NGLs and oil. Further, our estimated average net daily production for the month of May 2013 was 461 MMcfe/d, including 4,114 Bbls/d of NGLs and oil. We grew proved reserves at a compounded annual growth rate of 96% from 2006 to 2012, despite the 2012 divestiture of our Arkoma and Piceance Basin properties. Additionally, from January 1, 2012 to June 30, 2013, we increased our Appalachian proved reserves by 47% to 6.3 Tcfe, assuming ethane rejection at each date.

The charts below illustrate the growth in our average net daily production on an overall basis since 2006 and in the Appalachian Basin since 2010:

**Antero Average Net Daily Production**



**Antero Appalachian Basin Net Daily Production**



(1) CAGR means compounded annual growth rate.

**2013 Capital Budget**

For the year ended December 31, 2012, our capital expenditures were approximately \$1.68 billion for drilling, leasehold acquisitions and gathering. Our capital budget for 2013 is \$1.95 billion and includes:

- \$1.20 billion for drilling and completion, substantially all of which is allocated to our operated drilling in liquids-rich gas areas;
- \$500 million for the construction of gathering pipelines and facilities in the Appalachian Basin (including \$250 million for water handling infrastructure, primarily in the Marcellus Shale); and
- \$250 million for leasehold acquisitions.

As of March 31, 2013, we had spent approximately \$548 million of our 2013 capital budget. Consistent with our historical practice, we periodically review our capital expenditures and adjust our budget and its allocation based on liquidity, drilling results, commodity prices and the availability of opportunistic acreage acquisitions.

**Our Properties**

The Appalachian Basin, which covers over 185,000 square miles in portions of Kentucky, Tennessee, Virginia, West Virginia, Ohio, Pennsylvania and New York, is considered a highly attractive energy resource producing region with a long history of oil, natural gas and coal production. Importantly, the Appalachian Basin is strategically located near the high energy demand markets of the northeast United States, which has historically resulted in relatively higher realized sales prices due to the reduced transportation costs a purchaser must incur to transport commodities to end users. Based on production, the Appalachian Basin is the third largest overall gas field in the United States with over 9 Bcfe/d in 2012. Over the past five years, the focus of many producers has shifted from the younger, shallower conventional sandstone and carbonate reservoirs to the older, deeper Marcellus Shale and the newly emerging Utica Shale plays, which has driven Appalachian basin production growth. The Marcellus Shale accounted for over 7 Bcfe/d of the 2012 production making it the third largest United States gas field on a stand-alone basis, and the largest unconventional gas play in the world.

## ***Marcellus Shale***

We believe the Marcellus Shale is a premier North American shale play due to its high well recoveries relative to drilling and completion costs, broad aerial extent, relatively homogeneous high-quality reservoir characteristics and significant hydrocarbon resources in place. Based on these attributes, as well as drilling results publicly released by other operators, we believe that the Marcellus Shale offers some of the most attractive single-well rates of return of all North American conventional and unconventional play types. We also believe that the Marcellus Shale has two core areas: the southwestern core in northern West Virginia and southwestern Pennsylvania and the northeastern core in northeastern Pennsylvania. According to RigData, approximately 90% of the 89 drilling rigs currently operating in the Marcellus Shale are located in these two core areas.

The Devonian-aged Marcellus Shale is an unconventional reservoir that produces natural gas, NGLs and oil and is one of the largest natural gas fields in the country. The productive limits of the Marcellus Shale cover over 50,000 square miles within Pennsylvania, West Virginia, Ohio and New York. The Marcellus Shale is a black, organic-rich shale deposit generally productive at depths between 5,500 and 7,000 feet. Production from the brittle, gas-charged shale reservoir is best derived from hydraulically fractured horizontal wellbores that exceed 2,000 feet in lateral length and involve multi-stage fracture stimulations. The geology of the Marcellus Shale is analogous to the Barnett, Woodford and Fayetteville Shales, where we and our management team have successfully drilled and completed over 200 horizontal wells.

All of our approximately 320,000 net acres in the Marcellus Shale are located within the southwestern core. We have experienced virtually no geologic complexity in our drilling activities to date, which has contributed to what we believe to be a narrow and predictable band of expected well recoveries per 1,000 feet of lateral length on our wells. Further, the lower thermal maturity of the Marcellus Shale in the western half of the southwestern core yields liquids-rich natural gas and condensate, which allows for NGL processing that can significantly improve well economics.

Our intensive operational focus and leasehold consolidation efforts, coupled with the favorable geology of our position, makes the Marcellus Shale highly attractive. We completed 71 gross (67 net) horizontal Marcellus Shale wells in 2012 and 31 gross (30.6 net) horizontal Marcellus Shale wells in the three months ended March 31, 2013. As of March 31, 2013, we had a total of 391 gross (355 net) producing wells in the Marcellus Shale. We had an additional 36 gross (35 net) wells drilling or waiting on completion as of March 31, 2013 in the play. As of June 30, 2013, we had approximately 2,941 identified gross undrilled horizontal well locations in the Marcellus Shale.

For the three months ended March 31, 2013, we had average net daily production of 382 MMcfe/d in the Marcellus Shale. Further, our estimated average net daily production for the month of May 2013 was 461 MMcfe/d, including 4,114 Bbls/d of NGLs and oil. We currently have 15 rigs operating in the Marcellus Shale and expect to drill 135 wells in 2013, of which 51 had been drilled as of May 31, 2013. We believe our full cycle drilling, completion and operating costs on a per unit basis are among the lowest in the Marcellus Shale and the industry as a whole.

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The following table provides a summary of our current gross and net acreage by county in the Marcellus Shale.

<u>County</u>	<u>Gross Acres</u>	<u>Net Acres</u>
Doddridge, WV	141,977	100,015
Gilmer, WV	1,649	1,381
Harrison, WV	116,819	112,500
Lewis, WV	62	61
Marion, WV	4,275	3,911
Monongalia, WV	1,835	1,700
Pleasants, WV	1,503	810
Ritchie, WV	54,343	42,435
Tyler, WV	44,925	27,981
Wetzel, WV	4,481	2,464
Fayette, PA	7,680	5,423
Greene, PA	2,653	2,633
Washington, PA	12,654	12,179
Westmoreland, PA	7,073	6,919
Total	401,929	320,412

### *Utica Shale*

The Ordovician-aged Utica Shale is an unconventional reservoir underlying the Marcellus Shale. The productive limits of the Utica Shale cover over 80,000 square miles within Ohio, Pennsylvania, West Virginia and New York. The Utica Shale is an organic-rich continuous black shale, with most production occurring at vertical depths between 7,000 and 10,000 feet. To date, the rich and dry gas windows of the Utica Shale play have yielded the strongest results. The richest and thickest concentration of organic-carbon content is present within the Point Pleasant Shale layer of the Lower Utica formation. The Point Pleasant Shale is therefore our primary targeted development play of the Utica Shale.

Based on initial drilling results, we believe the Utica Shale is a premier North American shale play. We believe that the core area is located in the southern portion of the play, which has been defined by significant drilling activity by several operators. We own approximately 100,000 net acres in the core of the Utica Shale and expect to add to our sizeable land position. The proximity of our Utica acreage position to our operations in the Marcellus Shale allows us to capitalize on operating and midstream synergies. We are currently operating two drilling rigs in the Utica Shale and have completed eight horizontal wells with strong results. We have had a 100% success rate and believe over 90% of our acreage has liquids-rich gas processing potential. We expect to drill 21 wells in the Utica Shale in 2013, of which six had been drilled as of May 31, 2013. As of June 30, 2013, we had approximately 720 identified gross undrilled horizontal well locations in the Utica Shale.



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The following table provides a summary of our current gross and net acreage by county in the Utica Shale.

County	Gross Acres	Net Acres
Athens, OH	84	84
Belmont, OH	12,774	11,381
Guernsey, OH	9,935	8,108
Harrison, OH	26	26
Monroe, OH	41,132	36,094
Noble, OH	59,766	44,625
<b>Total</b>	<b>123,717</b>	<b>100,318</b>

**Operating Data**

The following table provides a summary of our net acreage and identified potential well locations as of June 30, 2013, our 2013 projected drilling schedule based on gross wells, and our average net daily production for the three months ended March 31, 2013:

	As of June 30, 2013					2013 Projected Drilling Schedule (Gross Wells)	Average Net Daily Production (MMcfe/d)
	Net Acres(1)	Identified Potential Well Locations(2)					
		Total	Proved Undeveloped	Probable	Possible		
Marcellus Shale:							
Highly Rich(3)	103,000	923	42	848	33	27	1
Rich(3)	155,000	1,430	584	789	57	108	358
Dry(3)	62,000	588	61	396	131	—	19
Utica Shale	100,000	720	17	175	528	21	1
Upper Devonian Shale	170,000	915	7	149	759	—	4
<b>Total</b>		<b>4,576</b>	<b>711</b>	<b>2,357</b>	<b>1,508</b>	<b>156</b>	<b>383</b>

- (1) Net acres prospective for the Upper Devonian Shale are also included among the Marcellus Shale net acres. The Upper Devonian Shale and the Marcellus Shale are stacked formations within the same geographic footprint.
- (2) Our proved undeveloped, probable and possible identified potential well locations are based on specifically engineered locations to which the applicable category of reserves were attributable based on SEC pricing as of June 30, 2013. For a description of how we determine our identified potential well locations, see "—Our Operations—Reserve Data—Identification of Potential Well Locations."
- (3) Classifications are based on our and other operators' drilling results in the Marcellus Shale and are subject to confirmation through actual future drilling results. For definitions of "highly rich gas," "rich gas" and "dry gas," see the "Glossary of Natural Gas and Oil Terms" in Annex A of this prospectus.

A majority of these potential locations have not been scheduled by management as part of our future multi-year drilling schedule and may not ultimately be completed to the extent we have insufficient resources to do so. We will be required to generate or raise significant capital to conduct such drilling activities. Any drilling activities we are able to conduct on these potential locations may not be successful or result in our ability to add additional proved reserves to our overall proved reserves.

### ***Midstream Operations***

Our exploration and development activities are supported by our operated natural gas gathering, compression, processing and transportation assets, as well as by third-party arrangements. Unlike many producing basins in the United States, certain portions of the Appalachian Basin do not have sufficient midstream infrastructure to support the existing and expected increasing levels of production. Actively managing these midstream operations allows us to ensure that we can obtain the necessary takeaway and processing capacity for our production and, when necessary or advisable, process our liquids-rich natural gas production to maximize the value that we can obtain for our products.

We maintain a strong commitment to developing the necessary midstream infrastructure to support our drilling schedule and production growth. We accomplish this goal through a combination of internal asset developments and contractual relationships with third-party midstream service providers. As part of our internal developments, we have invested a significant amount of capital in building low- and high-pressure gathering lines, compression facilities and water pipeline systems. In the past we have monetized certain midstream infrastructure assets for a significant return on investment and redeployed the proceeds into our ongoing operations. We will continue to invest significantly in our midstream infrastructure, as it allows us to optimize our processing and takeaway capacity to support our expected rapid production growth, affords us more control over the direction and planning of our drilling schedule and has historically created significant value for our equity owners. In 2013, we estimate we will spend a total of approximately \$500 million on midstream infrastructure. In addition, we believe that our midstream assets may be well suited for a master limited partnership or similar structure. Accordingly, in connection with the completion of this offering, we intend to contribute our midstream assets to Antero Midstream and enter into commercial arrangements for midstream services with them. Following the completion of this offering, we may also seek opportunities to finance our midstream business on a stand-alone basis. See "Certain Relationships and Related Party Transactions—Antero Midstream" and "Corporate Reorganization."

### ***Transportation and Takeaway Capacity***

Our primary firm transportation commitments include the following:

- We have several firm transportation contracts for volumes that increase from 268,000 MMBtu per day in 2013 to approximately 582,000 MMBtu per day in 2015 on the Columbia Gas Transmission Pipeline, which takes Marcellus natural gas to the Leach Delivery Point. We have firm transportation contracts from the Leach Delivery Point for volumes that increase from 227,000 MMBtu per day in 2013 to 460,000 MMBtu in 2015 on the Columbia Gulf Pipeline, which takes natural gas from the Leach Delivery Point to the Gulf Coast. The contracts expire at various dates from 2017 through 2025.
- We have various firm transportation contracts for approximately 153,500 MMBtu per day taking Marcellus natural gas to various other delivery points; these contracts expire in 2022.
- We have a firm transportation contract for 200,000 MMBtu per day on the Rockies Express Pipeline, or REX, beginning in January 2014 to take Utica gas to the Midwestern Gas Transmission pipeline, or Midwestern, which delivers natural gas to Chicago. We have 140,000 MMBtu of firm transportation on the Midwestern pipeline. We can also deliver natural gas into the Midwestern pipeline from our Columbia Gulf capacity through a southern interconnection to the Midwestern. The Rex and Midwestern firm transportation commitments expire in 2021.
- We have a firm transportation contract for approximately 20,000 Bbl per day on the Enterprise Products Partners ATEX pipeline beginning in the first quarter of 2014 to take ethane from Appalachia to Mont Belvieu, Texas. The ATEX firm transportation commitment expires in 2028.

- In addition to the firm transportation that we control, we also have firm sales commitments to third parties who hold firm capacity on downstream interstate pipelines, or will utilize our firm transportation, for approximately 240,000 MMBtu per day increasing to 320,000 MMBtu per day in 2015. Our firm transportation capacity is utilized for 100,000 MMBtu of the firm sales.

Under firm transportation contracts, we are obligated to deliver minimum daily volumes or pay fees for any deficiencies in deliveries. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Debt Agreements and Contractual Obligations" for information on our minimum fees for such contracts.

We continue to actively identify and evaluate additional processing and takeaway capacity to enhance the value of our Appalachian Basin position.

### ***Natural Gas Processing***

Our positions in the Marcellus and Utica Shales allow us to produce liquids rich natural gas that contains a significant amount of NGLs. Natural gas containing significant amounts of NGLs must be processed, which involves the removal and separation of NGLs from the wellhead natural gas in order to meet quality specifications of long-haul intrastate and interstate pipelines.

NGLs are valuable commodities once removed from the natural gas stream and fractionated into their key components. Fractionation refers to the process by which an NGL stream is separated into individual NGL products such as ethane, propane, normal butane, isobutane and natural gasoline. Fractionation occurs by heating the mixed NGL stream to allow for the separation of the component parts based on the specific boiling points of each product. Each of the individual products are marketed to different end user markets and consequently have their own market price.

Market prices for NGLs have exhibited heightened variability over the last few years as shale gas production has increased and new gas midstream infrastructure projects have been constructed. During 2012, prices for each of the individual NGL products decreased significantly, and some NGL products experienced larger declines than others. In particular, market prices for ethane at Mont Belvieu declined substantially driven by a surge in NGL production, combined with limited NGL processing and transportation capacity and end user demand constraints. In the Marcellus Shale region, additional infrastructure to transport ethane to end user markets, including Mont Belvieu and Sarnia, Ontario, is being developed.

The combination of infrastructure constraints in the Appalachian region and low ethane prices has resulted in many producers "rejecting" rather than "recovering" ethane. Ethane rejection occurs when ethane is left in the wellhead gas stream when the gas is processed, rather than being separated out and sold as a liquid after fractionation. When ethane is left in the gas stream, the BTU content of the residue gas at the outlet of the processing plant is higher. Producers will elect to "reject" ethane when the price received for the higher BTU residue gas is greater than the price received for the ethane being sold as a liquid after fractionation. When ethane is recovered, the BTU content of the residue gas is lower, but a producer is then able to recover the value of the ethane sold as a separate NGL product. In addition, gas processing plants can produce the other NGL products (propane, normal butane, isobutane and natural gasoline) while rejecting ethane.

The high liquids content of our natural gas production results in us achieving significantly higher realizations after processing, which together with our low operating and development costs, leads to high rates of return on our drilling program. Given the existing commodity price environment and the lack of an ethane market in the northeast, we are currently rejecting ethane when processing our liquids-rich gas; however, we realize a significant pricing upgrade when selling the remaining NGL product stream at current prices. We will elect to recover ethane when ethane prices recover and the value we receive for the ethane is greater than the BTU equivalent residue gas.

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Our typical NGL barrel, assuming ethane recovery for 1,250 BTU gas, is composed of 58% ethane, 23% propane, 9% pentanes, 7% normal butane and 3% isobutane. At March 31, 2013, the blended value of this NGL barrel was approximately \$24.38/Bbl. When we elect to reject ethane, we sell the ethane as BTU equivalent in our residue gas and our typical NGL barrel for 1,250 BTU gas is composed of approximately 51% propane, 21% pentanes, 16% normal butane, 9% isobutane and 3% ethane. At March 31, 2013, the blended value of an NGL barrel while rejecting ethane was \$51.14/Bbl.

Long-term demand for NGLs is expected to increase materially driven by large expansions in end user demand.

As of March 31, 2013, we owned and operated 75 miles of gathering pipelines in the Marcellus Shale and had access to an additional 31 miles of low-pressure pipelines owned and operated by Crestwood and 63 miles of high-pressure pipelines owned and operated by Energy Transfer Partners L.P. and MarkWest. Additionally, as of March 31, 2013, we owned and operated four compressor stations and utilized nine additional third-party compressor stations in the Marcellus Shale. The gathering, compression and dehydration services provided by third parties are contracted on a fixed-fee basis. For 2013, we estimate we will spend \$500 million on midstream infrastructure in the Marcellus Shale, including on low- and high-pressure gathering lines and the water pipeline system in order to support our planned drilling activities in the Marcellus Shale.

As of March 31, 2013, we owned and operated one mile of low-pressure pipeline in the Utica Shale. As of March 31, 2013, we utilized one third-party compressor station in the Utica Shale.

Through third-party contractual relationships, we have obtained committed cryogenic processing capacity for our Marcellus and Utica Shale production. For example, we have contracted with MarkWest to provide processing capacity as follows:

	Plant Processing Capacity (MMcf/d)	Contracted Firm Processing Capacity (MMcf/d)(1)	Anticipated Date of Completion
<b>Marcellus Shale:</b>			
Sherwood I	200	200	In service
Sherwood II	200	200	In service
Sherwood III	200	150	Fourth Quarter 2013
Sherwood IV	200	200	Second Quarter 2014
Marcellus Shale Total	800	750	
<b>Utica Shale:</b>			
Cadiz(2)	185	—	In service
Seneca I(3)	200	150	Fourth Quarter 2013
Seneca II(3)	200	—	Fourth Quarter 2013
Seneca III(4)	200	100	First Quarter 2014
Utica Shale Total	785	250	

- (1) Contracted firm capacity at the Sherwood and Seneca facilities as of the start-up date of each identified unit.
- (2) Firm interim capacity of 80 MMcf/d at Cadiz will be fixed at 50 MMcf/d capacity upon start-up of the Seneca I processing complex and will terminate upon start-up of the Seneca II processing complex.
- (3) We have an option on Seneca I firm capacity that, if exercised by a certain date, would result in an additional 50 MMcf/d of temporary interim capacity at the Seneca II processing facility.
- (4) Remaining 100 MMcf/d of capacity at the Seneca III processing complex is available for commitment at our option.

Our midstream infrastructure also includes an 80-mile proprietary water pipeline system for well completion operations that we are currently building. This water pipeline system will cost an anticipated \$525 million, with \$250 million expected to be spent in 2013, and is expected to deliver reliable year-round water supply, lessen water handling costs and decrease water truck traffic on local roadways. We believe this system will reduce our completion costs by up to \$600,000 per horizontal well and anticipate over 30% of our 2013 wells and up to 90% of our 2014 wells will utilize this new infrastructure.

### **Business Strengths**

Our objective is to build shareholder value through growth in reserves, production and cash flows by developing and expanding our portfolio of low-risk, high-return drilling locations and ensuring timely development of processing and pipeline takeaway capacity. We believe that the following strengths will allow us to successfully execute our business strategies:

- *Large, stable operated position in the core of the Marcellus and Utica Shales.* We own extensive and contiguous land positions in the core areas of two of the premier North American shale plays. We believe our approximately 320,000 net acres in the southwestern core of the Marcellus Shale and our 100,000 net acres in the Utica Shale are characterized by consistent and predictable geology. However, 94% of this acreage is currently undeveloped or does not include wells that have been drilled or completed to a point of producing commercially viable quantities. Approximately 52% of our Marcellus acreage and 20% of our Utica acreage was held by production at June 30, 2013, while an additional 27% and 78%, respectively, does not expire for five years or more. As of June 30, 2013, all of our total aggregate proved, probable and possible reserves were attributable to properties that we operate.
- *Multi-year, low-risk drilling inventory.* Our drilling inventory at June 30, 2013 consisted of 4,576 identified potential horizontal well locations on our existing leasehold acreage. We believe that we and other operators in the area have substantially delineated and de-risked our large contiguous acreage position in the southwestern core of the Marcellus Shale. We have drilled and completed 170 wells on our Marcellus Shale acreage with a success rate of 100%. We have drilled and completed eight horizontal wells in the core of the Utica Shale with a 100% success rate.
- *Exposure to large resource of liquids-rich gas and condensate.* Approximately 82% of our 4,576 identified potential horizontal well locations as of June 30, 2013 target the liquids-rich gas regions of the Marcellus and Utica Shales. The gas content of this liquids-rich gas allows for NGL processing that, coupled with the condensate, can significantly improve well economics. This exposure to a range of liquids contents allows us to optimize our drilling economics across a portfolio of liquids-rich gas locations in order to take advantage of the existing commodity price environment.
- *Low-cost leader.* We are a low-cost leader in the development of our properties. Our ability to drill consistently long laterals, averaging over 7,000 lateral feet, helps us to reduce costs on a per-lateral-foot basis, which is a key competitive advantage. We have implemented operational efficiencies to continue lowering our costs, such as (i) pad drilling, (ii) development of an extensive water pipeline system, (iii) the use of less expensive, shallow vertical drilling rigs to drill to the kick-off point of the horizontal wellbore, (iv) the use of natural gas powered rigs and (v) our proactive approach to meeting our gathering, processing and compression infrastructure needs.
- *Access to committed processing, compression and takeaway capacity in the Marcellus and Utica Shales.* We have contracted a total of 750 MMcf/d of processing capacity in the Marcellus Shale, 400 MMcf/d of which is currently in service. Similarly, we have 250 MMcf/d of contracted

processing capacity in the Utica Shale, with potential access to additional capacity. We also have secured 1,100,000 MMBtu/d of long-haul firm transportation or firm sales capacity and have committed to 20,000 Bbl/d of ethane takeaway capacity. We believe our commitment to midstream infrastructure allows us to commercialize our production more quickly and makes us a logical consolidator of additional acreage in our core areas.

- *Financial strength and flexibility.* As of March 31, 2013, after giving effect to this offering and the application of the net proceeds therefrom, we expect to have approximately \$ million of available borrowing capacity under our credit facility (after deducting \$32 million outstanding letters of credit). After the completion of this offering and the recent increase in lender commitments under our credit facility, together with our operating cash flow and hedging program, we believe we will have the financial flexibility to pursue our currently planned 2013 and 2014 delineation and development drilling activities.
- *Proven and incentivized executive and technical teams.* We believe our management team's experience and expertise across multiple resource plays provides a distinct competitive advantage. Our officers have an average of over 30 years of industry experience in the Rocky Mountain, Midcontinent and Appalachian operating regions and have successfully built, grown and sold two unconventional resource-focused upstream companies and one midstream company in the past 15 years. Additionally, our technical team has drilled over 400 horizontal wells in the Barnett, Woodford, Marcellus and Utica Shales over the past ten years. Our management team has a significant economic interest in us through their interest in our controlling stockholder, Antero Investment. Management's percentage interest in our stock held by Antero Investment may increase over time, without diluting public investors, if our stock price appreciates following this offering. We believe our management team's ability to increase their economic interest in us provides significant incentives to grow our stock price for the benefit of all stockholders.

## Business Strategy

Our strategy consists of the following principal elements:

- *Create shareholder value through the development of our extensive drilling inventory.* Since initiating our drilling program with one rig in 2009, we have invested over \$2.7 billion in land and drilling in the Appalachian Basin and currently intend to use an average of 17 rigs in 2013. With 15 rigs running in the Marcellus Shale, we are currently the most active driller in the area based on information from RigData. We intend to dedicate substantially all of our \$1.20 billion drilling and completion budget in 2013 to develop our liquids-rich areas. Approximately 85% of the 2013 drilling and completion budget is allocated to the Marcellus Shale, and the remaining 15% is allocated to the Utica Shale.
- *Enhance returns through a focus on optimizing full cycle economics.* We continually monitor and adjust our drilling program on a regular basis with the objective of achieving the highest total returns on our portfolio of drilling opportunities. We believe that we will achieve this objective by (i) minimizing the capital costs of drilling and completing horizontal wells, (ii) maximizing well production and recoveries by optimizing lateral length, the number of frac stages, perforation intervals and the type of fracture stimulation employed, (iii) targeting specific BTU windows within our leasehold position to optimize our hydrocarbon mix based on the existing commodity price environment, (iv) minimizing operating costs through efficient well management, and (v) pursuing infrastructure initiatives, such as the development of our extensive water pipeline system and gas gathering system.
- *Maximize wellhead economics by ensuring timely development of processing and pipeline takeaway capacity and the marketing of our NGLs.* We expect to continue to meaningfully increase our liquids production from the NGLs, oil and condensate associated with our growing natural gas

production. We endeavor to ensure that we have sufficient processing capacity in place to recover NGLs when economically desirable. We have also secured long-term firm takeaway capacity and firm sales on major pipelines that are in existence or currently under construction in our core operating areas to accommodate our growing production and to manage basis differentials. Further, we plan to maximize the value of our NGLs through processing and marketing agreements with transporters and NGL end users.

- *Continue growing our core acreage position through leasing and strategic acquisitions.* We intend to continue identifying and acquiring additional acreage and producing assets in our core areas in the Marcellus and Utica Shales. We believe that by managing a large team of dedicated landmen, we have a competitive advantage that enables us to continue to opportunistically add acreage to our core positions. This team of landmen has allowed us to build a large, contiguous acreage position in our Marcellus and Utica Shale plays, making us the logical acreage consolidator in our core areas. We initially targeted and acquired 114,000 net acres in the Marcellus Shale in 2008, based on specific geologic and technical analysis, and have selectively built our position to approximately 320,000 net acres. We started building our targeted Utica Shale acreage position in the fourth quarter of 2011 and currently have approximately 100,000 net acres of leasehold in the core of the liquids-rich window in Ohio.
- *Manage commodity price exposure through an active hedging program to protect our expected future cash flows.* We expect to continue to maintain an active hedging program designed to mitigate volatility in commodity prices and regional basis differentials and to protect our expected future cash flows. As of March 31, 2013, we had entered into hedging contracts through December 31, 2018 covering a total of approximately 918 Bcfe of our projected natural gas and oil production at a weighted average price of \$4.81 per Mcfe. For the period from April 1, 2013 until December 31, 2013, we have hedged approximately 106 Bcfe of our projected natural gas and oil production at a weighted average price of \$4.64 per Mcfe. This hedging program has led to over \$650 million in realized gains over the past five years.

## **Our Operations**

### ***Reserve Data***

The information with respect to our estimated reserves presented below has been prepared in accordance with the rules and regulations of the SEC unless otherwise noted.

#### *Reserves Presentation*

Our estimated proved, probable and possible reserves and PV-10 based on SEC pricing as of December 31, 2012 and June 30, 2013 (assuming ethane recovery and ethane rejection) are based on evaluations prepared by our internal reserve engineers, which have been audited by our independent reserve engineers, DeGolyer and MacNaughton, or D&M. See "Summary—Our Properties—Reserves." Copies of the summary reports of D&M with respect to our reserves as of December 31, 2012 and June 30, 2013 are filed as exhibits to the registration statement of which this prospectus forms a part. See "—Preparation of Reserve Estimates" for definitions of proved, probable and possible reserves and the technologies and economic data used in their estimation.

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The following tables summarize our reserves and related PV-10 using SEC pricing at June 30, 2013 and December 31, 2012 assuming ethane "recovery" and ethane "rejection."

	June 30, 2013	
	Estimated Net Reserves (Bcfe)(1)	
	Ethane Recovery	Ethane Rejection
<b>Estimated Proved Reserves:</b>		
Natural gas (Bcf)	5,448	5,724
NGLs (MMBbl)	266	88
Oil (MMBbl)	5	5
Total equivalent proved reserves	7,074	6,282
Total equivalent proved developed reserves	1,590	1,445
Natural gas (Bcf)	1,276	1,327
NGLs (MMBbl)	51	18
Oil (MMBbl)	1	1
Percent proved developed	22%	23%
PV-10 of proved reserves (in millions)(2)	\$ 4,243	\$ 4,468
<b>Estimated Probable Reserves:</b>		
Natural gas (Bcf)	10,416	11,366
NGLs (MMBbl)	1,009	398
Oil (MMBbl)	48	48
Total equivalent probable reserves	16,758	14,039
PV-10 of probable reserves (in millions)(2)	\$ 8,223	\$ 8,868
<b>Estimated Possible Reserves:</b>		
Natural gas (Bcf)	6,356	6,659
NGLs (MMBbl)	305	110
Oil (MMBbl)	18	18
Total equivalent possible reserves	8,293	7,428
PV-10 of possible reserves (in millions)(2)	\$ 2,210	\$ 2,413

- (1) Volumes and values were determined under SEC pricing using index prices for natural gas and oil of \$3.43 per MMBtu and \$81.65 per Bbl. These prices were then adjusted for gathering, processing, compression and other costs. For the adjusted realized prices under SEC pricing, see "—Adjusted Index Prices Used in Reserve Calculations."
- (2) PV-10 was prepared using SEC pricing, discounted at 10% per annum, without giving effect to taxes or hedges. PV-10 is a non-GAAP financial measure. We believe that the presentation of PV-10 is relevant and useful to our investors because it presents the discounted future net cash flows attributable to our reserves prior to taking into account future corporate income taxes and our current tax structure. PV-10 is based on a pricing methodology and discount factors that are consistent for all companies. Because of this, PV-10 can be used within the industry and by creditors and securities analysts to evaluate estimated net cash flows from proved reserves on a more comparable basis. Investors should be cautioned that PV-10 does not represent an estimate of the fair market value of our proved reserves. With respect to PV-10 calculated as of an interim date, it is not practicable to calculate the taxes for the related interim period because GAAP does not provide for disclosure of standardized measure on an interim basis.



The following table sets forth the estimated future net cash flows from our proved reserves (without giving effect to our commodity hedges), the present value of those net cash flows before income tax (PV-10), and the prices used in projecting future net cash flows at June 30, 2013:

	June 30, 2013 (In millions)
Future net cash flows	\$ 14,411
Present value of future net cash flows:	
Before income tax (PV-10)	\$ 4,468

Future net cash flows represent projected revenues from the sale of proved reserves net of production and development costs (including operating expenses and production taxes). Costs are based on costs in effect for the applicable year without escalation. There can be no assurance that the proved reserves will be produced as estimated or that the prices and costs will remain constant. There are numerous uncertainties inherent in estimating reserves and related information and different reserve engineers often arrive at different estimates for the same properties.

	December 31, 2012	
	Estimated Net Reserves (Bcf)(1)	
	Ethane Recovery	Ethane Rejection
<b>Estimated Proved Reserves:</b>		
Natural gas (Bcf)	3,694	3,909
NGLs (MMBbl)	203	60
Oil (MMBbl)	3	3
Total equivalent proved reserves	4,929	4,283
Total equivalent proved developed reserves	1,047	933
Natural gas (Bcf)	828	866
NGLs (MMBbl)	36	10
Oil (MMBbl)	1	1
Percent proved developed	21%	22%
PV-10 of proved reserves (in millions)(2)	\$ 1,923	\$ 1,742
Standardized measure (in millions)(3)	\$ 1,601	
<b>Estimated Probable Reserves:</b>		
Natural gas (Bcf)	8,726	9,674
NGLs (MMBbl)	1,008	382
Oil (MMBbl)	22	22
Total equivalent probable reserves	14,906	12,094
PV-10 of probable reserves (in millions)(2)(3)	\$ 6,583	\$ 5,843
<b>Estimated Possible Reserves:</b>		
Natural gas (Bcf)	3,840	4,202
NGLs (MMBbl)	380	140
Oil (MMBbl)	31	31
Total equivalent possible reserves	6,305	5,230
PV-10 of possible reserves (in millions)(2)(3)	\$ 3,161	\$ 2,879

- (1) Volumes and values were determined under SEC pricing using index prices for natural gas and oil of \$2.78 per MMBtu and \$85.05 per Bbl in the Marcellus Shale and \$2.78 per MMBtu and \$84.77

per Bbl in the Utica Shale. These prices were then adjusted for gathering, processing, compression and other costs. For the adjusted realized prices under SEC pricing, see "—Adjusted Index Prices Used in Reserve Calculations."

- (2) PV-10 was prepared using SEC pricing, discounted at 10% per annum, without giving effect to taxes or hedges. PV-10 is a non-GAAP financial measure. We believe that the presentation of PV-10 is relevant and useful to our investors as supplemental disclosure to the standardized measure of future net cash flows, or after tax amount, because it presents the discounted future net cash flows attributable to our reserves prior to taking into account future corporate income taxes and our current tax structure. While the standardized measure is dependent on the unique tax situation of each company, PV-10 is based on a pricing methodology and discount factors that are consistent for all companies. Because of this, PV-10 can be used within the industry and by creditors and securities analysts to evaluate estimated net cash flows from proved reserves on a more comparable basis. Investors should be cautioned that neither PV-10 nor standardized measure represents an estimate of the fair market value of our proved reserves.

The following table sets forth the estimated future net cash flows from our proved reserves (without giving effect to our commodity hedges), the present value of those net cash flows before income tax (PV-10), the present value of those net cash flows after income tax (standardized measure) and the prices used in projecting future net cash flows at December 31, 2012:

	<b>December 31, 2012</b>
	<b>(In millions)</b>
Future net cash flows	\$ 7,221
Present value of future net cash flows:	
Before income tax (PV-10)	\$ 1,923
Income taxes	(322)
After income tax (standardized measure)	\$ 1,601

Future net cash flows represent projected revenues from the sale of proved reserves net of production and development costs (including operating expenses and production taxes). Prices for 2012 were based on 12-month unweighted average of the first-day-of-the-month pricing, without escalation. Costs are based on costs in effect for the applicable year without escalation. There can be no assurance that the proved reserves will be produced as estimated or that the prices and costs will remain constant. There are numerous uncertainties inherent in estimating reserves and related information and different reserve engineers often arrive at different estimates for the same properties.

- (3) GAAP does not prescribe any corresponding GAAP measure for PV-10 of probable or possible reserves or for any pricing sensitivity scenario. As a result, it is not practicable for us to reconcile these additional PV-10 measures to GAAP standardized measure.

#### *Price Sensitivity*

The following table summarizes our reserves and related PV-10 using strip pricing at June 30, 2013, assuming ethane "recovery" and ethane "rejection," in order to illustrate the sensitivity of our estimated reserves and related PV-10 to changes in product price levels based on pricing information released in the Wells Fargo Commodities Indicative Pricing Sheet. Prices used were based on the escalating price curve for the next five years and held constant thereafter for the life of the producing properties.

Our estimated proved, probable and possible reserves and PV-10 as of June 30, 2013 based on strip pricing as of June 30, 2013 have been prepared by our internal reserve engineers and audited by our independent reserve engineers.

**Sensitivity of Reserves to Product Price Levels**

	June 30, 2013	
	Estimated Net Reserves (Bcfe)(1)	
	Ethane Recovery	Ethane Rejection
<b>Sensitivity of Estimated Proved Reserves Based on Strip Pricing:</b>		
Natural gas (Bcf)	5,460	5,737
NGLs (MMBbl)	266	88
Oil (MMBbl)	5	5
Total equivalent proved reserves	7,087	6,295
Total equivalent proved developed reserves	1,594	1,448
Natural gas (Bcf)	1,279	1,330
NGLs (MMBbl)	51	18
Oil (MMBbl)	1	1
Percent proved developed	22%	23%
PV-10 of proved reserves (in millions)(2)	\$ 5,279	\$ 5,644
<b>Sensitivity of Estimated Probable Reserves Based on Strip Pricing:</b>		
Natural gas (Bcf)	10,432	11,383
NGLs (MMBbl)	1,009	398
Oil (MMBbl)	48	48
Total equivalent probable reserves	16,776	14,057
PV-10 of probable reserves (in millions)(2)	\$ 9,173	\$ 10,210
<b>Sensitivity of Estimated Possible Reserves Based on Strip Pricing:</b>		
Natural gas (Bcf)	6,371	6,674
NGLs (MMBbl)	305	110
Oil (MMBbl)	18	18
Total equivalent possible reserves	8,310	7,444
PV-10 of possible reserves (in millions)(2)	\$ 2,939	\$ 3,245

- (1) Volumes and values were determined under strip pricing using index prices for natural gas and oil of \$3.86 per MMBtu and \$77.04 per Bbl. These prices were then adjusted for gathering, processing, compression and other costs. For the adjusted realized prices under strip pricing, see "—Adjusted Index Prices Used in Reserve Calculations."
- (2) PV-10 was prepared using average yearly prices computed using strip pricing, discounted at 10% per annum, without giving effect to taxes or hedges. PV-10 is a non-GAAP financial measure. We believe that the presentation of PV-10 is relevant and useful to our investors because it presents the discounted future net cash flows attributable to our reserves prior to taking into account future corporate income taxes and our current tax structure. PV-10 is based on a pricing methodology and discount factors that are consistent for all companies. Because of this, PV-10 can be used within the industry and by creditors and securities analysts to evaluate estimated net cash flows from proved reserves on a more comparable basis. Investors should be cautioned that PV-10 does not represent an estimate of the fair market value of our reserves. With respect to PV-10 calculated as of an interim date, it is not practicable to calculate the taxes for the related interim period because GAAP does not provide for disclosure of standardized measure on an interim basis.

*Changes in Proved Reserves During the Six Months Ended June 30, 2013*

The following table summarizes the changes in our estimated proved reserves during the six months ended June 30, 2013 (in Bcfe):

<b>Proved reserves, December 31, 2012</b>	4,929
Extensions, discoveries, and other additions	1,982
Price and performance revisions	(553)
Sales of reserves in place	—
Production	(76)
<b>Proved reserves, June 30, 2013</b>	<u>6,282</u>

Extensions, discoveries, and other additions during the six months ended June 30, 2013 of 1,982 Bcfe were added through the drillbit in the Marcellus and Utica Shales, including the addition of 210 Bcfe attributable to NGLs and oil. Upward price revisions increased proved reserves by 10 Bcfe and performance revisions increased proved reserves by 82 Bcfe. Downward price revisions decreased proved reserves by 645 Bcfe as a result of the pricing environment shifting to one that favors ethane rejection at June 30, 2013. Our estimated proved reserves as of June 30, 2013 totaled approximately 6.3 Tcfe. Our proved developed reserves increased to 1,445 Bcfe at June 30, 2013.

*Changes in Proved Reserves During 2012*

The following table summarizes the changes in our estimated proved reserves during 2012 (in Bcfe):

<b>Proved reserves, December 31, 2011</b>	5,017
Extensions, discoveries, and other additions	1,951
Price and performance revisions	222
Sales of reserves in place(1)	(2,174)
Production	(87)
<b>Proved reserves, December 31, 2012</b>	<u>4,929</u>

(1) Includes 2012 production from Arkoma and Piceance Basins of 35 Bcfe.

Extensions, discoveries, and other additions during 2012 of 1,951 Bcfe were added through the drillbit in the Marcellus and Utica Shales, including the addition of 709 Bcfe attributable to NGLs and oil. Downward price revisions resulted in a reduction of proved reserves of 102 Bcfe and performance revisions increased proved reserves by 324 Bcfe. Sales of proved reserves of 2,174 Bcfe resulted from the sale of our Arkoma and Piceance Basin properties. Our estimated proved reserves as of December 31, 2012 totaled approximately 4.9 Tcfe. Our proved developed reserves increased year over year by 24% to 1,047 Bcfe at December 31, 2012.

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*Adjusted Index Prices Used in Reserve Calculations*

The following tables show our index prices used in our reserve calculations as of the dates indicated under both SEC pricing and strip pricing:

	June 30, 2013	
	Marcellus	Utica
<b>SEC Pricing:</b>		
Natural gas (per MMBtu)	\$ 3.43	\$ 3.43
Oil (per Bbl)	\$ 81.65	\$ 81.65
<b>Strip Pricing:</b>		
Natural gas (per MMBtu)	\$ 3.86	\$ 3.86
Oil (per Bbl)	\$ 77.04	\$ 77.04
	December 31, 2012	
	Marcellus	Utica
<b>SEC Pricing:</b>		
Natural gas (per MMBtu)	\$ 2.78	\$ 2.78
Oil (per Bbl)	\$ 85.05	\$ 84.77

The following tables show our index prices, as adjusted for gathering, processing, compression and other costs, and used in our reserve calculations as of the dates indicated under both SEC pricing and strip pricing and assuming ethane "recovery" and ethane "rejection":

	June 30, 2013					
	Ethane Recovery			Ethane Rejection		
	Marcellus	Upper Devonian	Utica	Marcellus	Upper Devonian	Utica
<b>SEC Pricing:</b>						
Proved Reserves:						
Natural gas (per Mcf)	\$ 3.00	\$ 3.12	\$ 2.77	\$ 3.01	\$ 3.12	\$ 3.11
NGLs (per Bbl)	\$ 17.82		\$ 23.43	\$ 45.66		\$ 48.80
Oil (per Bbl)	\$ 81.65		\$ 81.14	\$ 81.65		\$ 81.14
Probable Reserves:						
Natural gas (per Mcf)	\$ 3.06	\$ 3.09	\$ 2.75	\$ 3.09	\$ 3.09	\$ 3.10
NGLs (per Bbl)	\$ 21.54	\$ 14.70	\$ 21.64	\$ 46.98	\$ 44.06	\$ 48.12
Oil (per Bbl)	\$ 81.65		\$ 81.05	\$ 81.65		\$ 81.05
Possible Reserves:						
Natural gas (per Mcf)	\$ 3.01	\$ 2.86	\$ 3.07	\$ 3.01	\$ 2.97	\$ 3.23
NGLs (per Bbl)	\$ 24.95	\$ 16.77	\$ 22.04	\$ 47.85	\$ 45.25	\$ 48.12
Oil (per Bbl)	\$ 81.65	\$ 81.65	\$ 81.06	\$ 81.65	\$ 81.65	\$ 81.06

June 30, 2013

	Ethane Recovery			Ethane Rejection		
	Marcellus	Upper Devonian	Utica	Marcellus	Upper Devonian	Utica
<b>Strip Pricing Sensitivity</b>						
<b>Case:</b>						
Sensitivity of Proved Reserves Based on Strip Pricing:						
Natural gas (per Mcf)	\$ 3.75	\$ 3.91	\$ 3.39	\$ 3.76	\$ 3.91	\$ 3.78
NGLs (per Bbl)	\$ 15.43		\$ 19.80	\$ 37.93		\$ 40.66
Oil (per Bbl)	\$ 72.06		\$ 74.42	\$ 72.06		\$ 74.42
Sensitivity of Probable Reserves Based on Strip Pricing:						
Natural gas (per Mcf)	\$ 3.86	\$ 3.90	\$ 3.08	\$ 3.89	\$ 3.90	\$ 3.89
NGLs (per Bbl)	\$ 18.44	\$ 12.78	\$ 18.35	\$ 39.01	\$ 37.21	\$ 39.87
Oil (per Bbl)	\$ 71.13		\$ 72.17	\$ 71.13		\$ 72.17
Sensitivity of Possible Reserves Based on Strip Pricing:						
Natural gas (per Mcf)	\$ 3.79	\$ 3.63	\$ 3.63	\$ 3.79	\$ 3.76	\$ 4.03
NGLs (per Bbl)	\$ 21.18	\$ 14.63	\$ 18.69	\$ 39.73	\$ 36.96	\$ 39.78
Oil (per Bbl)	\$ 70.89	\$ 70.88	\$ 70.70	\$ 70.89	\$ 70.88	\$ 70.66

December 31, 2012

	Ethane Recovery		Ethane Rejection	
	Marcellus	Utica	Marcellus	Utica
<b>SEC Pricing:</b>				
Proved Reserves:				
Natural gas (per Mcf)	\$ 1.99	\$ 2.08	\$ 2.17	\$ 2.37
NGLs (per Bbl)	\$ 21.75	\$ 28.81	\$ 48.88	\$ 53.87
Oil (per Bbl)	\$ 85.05	\$ 84.47	\$ 85.05	\$ 84.47
Probable Reserves:				
Natural gas (per Mcf)	\$ 2.06	\$ 2.08	\$ 2.32	\$ 2.37
NGLs (per Bbl)	\$ 26.48	\$ 28.48	\$ 51.60	\$ 54.12
Oil (per Bbl)	\$ 85.05	\$ 84.47	\$ 85.05	\$ 84.47
Possible Reserves:				
Natural gas (per Mcf)	\$ 2.12	\$ 2.13	\$ 2.27	\$ 2.40
NGLs (per Bbl)	\$ 26.36	\$ 25.56	\$ 51.45	\$ 51.84
Oil (per Bbl)	\$ 85.05	\$ 84.47	\$ 85.05	\$ 84.47

*Proved Undeveloped Reserves*

Proved undeveloped reserves are included in the previous table of total proved reserves. The following table summarizes the changes in our estimated proved undeveloped reserves during 2012 (in Bcfe):

<b>Proved undeveloped reserves, December 31, 2011</b>	4,173
Conversions into proved developed reserves	377
Extensions, discoveries, and other additions	1,315
Price and performance revisions	(233)
Sales of reserves in place	(1,750)
<b>Proved undeveloped reserves, December 31, 2012</b>	<u>3,882</u>

Extensions, discoveries, and other additions during 2012 of 1,692 Bcfe proved undeveloped reserves were added through the drillbit in the Marcellus and Utica Shales, including the addition of 613 Bcfe attributable to NGLs and oil. Downward price revisions resulted in a reduction of proved undeveloped reserves by 95 Bcfe and performance revisions reduced proved undeveloped reserves by 138 Bcfe. Sales of proved undeveloped reserves of 1,750 Bcfe resulted from the sale of our Arkoma and Piceance Basin properties. Our estimated proved undeveloped reserves as of December 31, 2012 totaled approximately 3.9 Tcfe.

We incurred costs of approximately \$396 million in 2012 to convert 377 Bcfe of proved undeveloped reserves to proved developed reserves in 2012. Estimated future development costs relating to the development of our proved undeveloped reserves at December 31, 2012 are approximately \$3.3 billion over the next five years, which we expect to finance through the proceeds of this offering, cash flow from operations, borrowings under our credit facility, sales of non-core assets and other sources of capital financing. Our drilling programs to date have focused on proving our undeveloped leasehold acreage through delineation drilling. While we will continue to drill leasehold delineation wells and build on our current leasehold position, we will also focus on drilling our proved undeveloped reserves. All of our proved undeveloped reserves are expected to be developed over the next five years. See "Risk Factors—Risks Related to Our Business—The development of our estimated proved undeveloped reserves may take longer and may require higher levels of capital expenditures than we currently anticipate. Therefore, our estimated proved undeveloped reserves may not be ultimately developed or produced."

*Preparation of Reserve Estimates*

Our reserve estimates as of December 31, 2012, 2011 and 2010 and June 30, 2013 included in this prospectus were prepared by our internal reserve engineers in accordance with petroleum engineering and evaluation principles established by the Society of Petroleum Evaluation Engineers and definitions and guidelines established by the SEC. Certain of the internally prepared reserve estimates were audited by our independent reserve engineers. Our independent reserve engineers were selected for their historical experience and geographic expertise in engineering unconventional resources. The technical persons responsible for overseeing the audit of our reserve estimates presented herein meet the requirements regarding qualifications, independence, objectivity and confidentiality set forth in the Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information promulgated by the Society of Petroleum Engineers.

Our internal staff of petroleum engineers and geoscience professionals work closely with our independent reserve engineers to ensure the integrity, accuracy and timeliness of data furnished to our independent reserve engineers in their reserve auditing process. Periodically, our technical team meets with the independent reserve engineers to review properties and discuss methods and assumptions used by us to prepare reserve estimates. Our internally prepared reserve estimates and related reports are reviewed and approved by our Vice President of Reserves, Planning & Midstream, Ward D. McNeilly,

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and our Vice President of Production, Kevin J. Kilstrom. Mr. McNeilly has been with the Company since October 2010. Mr. McNeilly has 34 years of experience in oil and gas operations, reservoir management, and strategic planning. From 2007 to October 2010 Mr. McNeilly was the Operations Manager for BHP Billiton's Gulf of Mexico operations. From 1996 through 2007, Mr. McNeilly served in various North Sea and Gulf of Mexico Deepwater operations and asset management positions with Amoco and then BP. From 1979 through 1996 Mr. McNeilly served in various domestic and international operations and reservoir and asset management positions with Amoco. Mr. McNeilly holds a B.S. in Geological Engineering from the Mackay School of Mines at the University of Nevada.

Mr. Kilstrom has served as Vice President of Production since June 2007. Mr. Kilstrom was a Manager of Petroleum Engineering with AGL Energy of Sydney, Australia from 2006 to 2007. Prior to AGL, Mr. Kilstrom was with Marathon Oil as an Engineering Consultant and Asset Manager from 2003 to 2006 and as a Business Unit Manager for Marathon's Powder River coal bed methane assets from 2001 to 2003. Mr. Kilstrom also served as a member of the board of directors of three Marathon subsidiaries from October 2003 through May 2005. Mr. Kilstrom was an Operations Manager and reserve engineer at Pennaco Energy from 1999 to 2001. Mr. Kilstrom was at Amoco for more than 22 years prior to 1999 where he served in various operating roles with a focus on unconventional resources. Mr. Kilstrom holds a B.S. in Engineering from Iowa State University and an M.B.A. from DePaul University. Our senior management also reviews our reserve estimates and related reports with Mr. McNeilly and Mr. Kilstrom and other members of our technical staff. Additionally, our senior management reviews and approves any internally estimated significant changes to our proved reserves on a quarterly basis.

Proved reserves are reserves which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible from a given date forward from known reservoirs under existing economic conditions, operating methods and government regulations prior to the time at which contracts providing the right to operate expires, unless evidence indicates that renewal is reasonably certain. The term "reasonable certainty" implies a high degree of confidence that the quantities of oil or natural gas actually recovered will equal or exceed the estimate. To achieve reasonable certainty, we and the independent reserve engineers employed technologies that have been demonstrated to yield results with consistency and repeatability. The technologies and economic data used in the estimation of our proved reserves include, but are not limited to, well logs, geologic maps and available downhole and production data, micro-seismic data and well-test data. Probable reserves are reserves that are less certain to be recovered than proved reserves but which, together with proved reserves, are as likely as not to be recovered. Estimates of probable reserves which may potentially be recoverable through additional drilling or recovery techniques are by nature more uncertain than estimates of proved reserves and accordingly are subject to substantially greater risk of not actually being realized by us. Possible reserves are reserves that are less certain to be recovered than probable reserves. Estimates of possible reserves are also inherently imprecise. Estimates of probable and possible reserves are also continually subject to revisions based on production history, results of additional exploration and development, price changes and other factors.

### *Methodology Used to Apply Reserve Definitions*

In the Marcellus Shale, our estimated reserves are based on information from our large, operated proved developed producing reserve base, as well as public information from other operators in the area, which can be used to confirm or supplement our internal estimates. Typically, proved undeveloped properties are booked based on applying the estimated lateral length to the average Bcf per 1,000 feet from our proved developed producing wells.

We may attribute up to 11 proved undeveloped locations based on one proved developed producing well where analysis of geologic and engineering data can be estimated with reasonable certainty to be commercially recoverable. However, the ratio of proved undeveloped locations



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generated will be lower when multiple proved developed wells are drilled on a single pad. In addition, we have applied the concept of a Highly-Developed Area, or HDA, to certain areas of our Marcellus Shale acreage whereby undeveloped properties are booked as proved reserves so long as well count is sufficient for statistical analysis and certain land, geologic, engineering and commercial criteria are met, including sufficient proved developed producing results and a geologically continuous and consistent reservoir.

Locations for probable reserves are booked within a three-mile radius of existing Marcellus Shale production where analysis of geologic and engineering data suggests these locations are more likely than not to be recovered. Possible locations are booked outside the scope of the three-mile probable radius.

Although our operating history in the Utica Shale is more limited than our Marcellus Shale operations, we expect to be able to apply a similar methodology once the well count is sufficient for statistical analysis. The primary differences between the two areas are that (i) we have not established an HDA in the Utica Shale and (ii) each proved developed producing well in the Utica Shale is only able to generate four direct offset well locations in the Utica Shale due to less relative maturity.

### *Identification of Potential Well Locations*

Our identified potential well locations include:

- locations to which proved, probable or possible reserves were attributable based on SEC pricing as of June 30, 2013 and December 31, 2012;
- locations to which proved, probable or possible reserves would have been attributable but for the fact that they were uneconomic based on SEC pricing as of June 30, 2013 and December 31, 2012 due to lateral length, commodity prices or other technical factors; and
- locations prospective for the Upper Devonian Shale to which no proved, probable or possible reserves were attributable based on SEC pricing as of June 30, 2013 and December 31, 2012.

Our identified potential well locations to which proved, probable or possible reserves were attributable are identified in accordance with the methodology described in "—Methodology Used to Apply Reserve Definitions." Our locations that were uneconomic based on SEC pricing as of June 30, 2013 include 89 locations in the Marcellus Shale, 86 locations in the Utica Shale and 185 in the Upper Devonian Shale. Our identified potential well locations prospective for the Utica Shale dry gas include 950 potential locations as of June 30, 2013.

### *Production, Revenues and Price History*

Natural gas, NGLs, and oil are commodities; therefore, the price that we receive for our production is largely a function of market supply and demand. While demand for natural gas in the United States has increased dramatically since 2000, natural gas and NGL supplies have also increased significantly as a result of horizontal drilling and fracture stimulation technologies which have been used to find and recover large amounts of oil and natural gas from various shale formations throughout the United States. Demand is impacted by general economic conditions, weather and other seasonal conditions. Over or under supply of natural gas can result in substantial price volatility. Historically, commodity prices have been volatile, and we expect that volatility to continue in the future. A substantial or extended decline in natural gas prices or poor drilling results could have a material adverse effect on our financial position, results of operations, cash flows, quantities of natural gas reserves that may be economically produced and our ability to access capital markets. See "Risk Factors—Risks Related to Our Business—Natural gas prices are volatile. A substantial or extended decline in natural gas prices may adversely affect our business, financial condition or results of operations and our ability to meet our capital expenditure obligations and financial commitments."

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The following table sets forth information regarding our production, our revenues and realized prices, and production costs from continuing operations in the Appalachian Basin for the years ended December 31, 2010, 2011 and 2012 and for the three months ended March 31, 2012 and 2013. For additional information on price calculations, see information set forth in "Management's Discussion and Analysis of Financial Condition and Results of Operations."

*Continuing Operations Data—Appalachian Basin*

	Year Ended December 31,			Three Months Ended March 31,	
	2010	2011	2012	2012	2013
<b>Production data:</b>					
Natural gas (Bcf)	11	45	87	16	33
NGLs (MBbl)	—	—	71	—	205
Oil (MBbl)	—	2	19	1	10
Total combined production (Bcfe)	11	45	87	16	34
Average daily combined production (MMcfe/d)	30	124	239	177	383
<b>Average sales prices:</b>					
Natural gas (per Mcf)	\$ 4.39	\$ 4.33	\$ 2.99	\$ 2.80	\$ 3.67
NGLs (per Bbl)	\$ —	\$ —	\$ 52.09	\$ —	\$ 51.55
Oil (per Bbl)	\$ —	\$ 97.19	\$ 80.34	\$ 102.13	\$ 86.12
Combined average sales prices before effects of hedges (per Mcfe)(1)	\$ 4.39	\$ 4.33	\$ 3.03	\$ 2.80	\$ 3.87
Combined average sales prices after effects of hedges (per Mcfe)(1)	\$ 5.78	\$ 5.44	\$ 5.08	\$ 5.70	\$ 5.26
<b>Average costs per Mcfe:</b>					
Lease operating costs	\$ 0.11	\$ 0.10	\$ 0.07	\$ 0.04	\$ 0.03
Gathering, compression, processing and transportation	\$ 0.85	\$ 0.83	\$ 1.04	\$ 0.72	\$ 1.19
Production taxes	\$ 0.27	\$ 0.26	\$ 0.23	\$ 0.23	\$ 0.25
Depreciation, depletion, amortization and accretion	\$ 1.71	\$ 1.24	\$ 1.17	\$ 1.00	\$ 1.18
General and administrative	\$ 2.03	\$ 0.74	\$ 0.52	\$ 0.57	\$ 0.37

- (1) Average sales prices shown reflect both of the before and after effects of our realized commodity hedging transactions. Our calculation of such effects includes realized gains or losses on cash settlements for commodity derivatives, which do not qualify for hedge accounting because we do not designate them as hedges.

*Discontinued Operations Data—Arkoma and Piceance Basins*

The table above does not include the following production or revenue from discontinued operations from the Arkoma and Piceance Basin properties which were sold in 2012:

	Year Ended December 31,		
	2010	2011	2012
Production (combined Bcfe)	36	44	35
Natural gas, NGL and oil production revenues (in millions)	\$ 159	\$ 197	\$ 125

**Productive Wells**

As of March 31, 2013, we had a total of 392 gross (356 net) producing wells, averaging a 90.8% working interest. This well count includes 243 gross and 214 net shallow vertical wells that were

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acquired in conjunction with leasehold acreage acquisitions. Our wells are natural gas wells, many of which also produce oil, condensate and NGLs. We do not have interests in any wells that only produce oil or NGLs.

**Acreage**

The following table sets forth certain information regarding the total developed and undeveloped acreage in which we owned an interest as of March 31, 2013. Approximately 53% of our Marcellus acreage and 19% of our Utica acreage was held by production at March 31, 2013. Acreage related to royalty, overriding royalty and other similar interests is excluded from this table.

Basin	Developed Acres		Undeveloped Acres		Total Acres	
	Gross	Net	Gross	Net	Gross	Net
Marcellus	23,966	23,627	381,506	283,316	405,472	306,943
Utica	1,283	1,018	110,967	89,085	112,250	90,103
<b>Total</b>	<b>25,249</b>	<b>24,645</b>	<b>492,473</b>	<b>372,401</b>	<b>517,722</b>	<b>397,046</b>

**Undeveloped Acreage Expirations**

The following table sets forth the number of total gross and net undeveloped acres as of March 31, 2013 that will expire in 2013, 2014 and 2015 in the Marcellus Shale unless production is established within the spacing units covering the acreage prior to the expiration dates or unless such acreage is extended or renewed.

	Gross	Net
2013	12,984	8,069
2014	8,890	5,360
2015	30,531	19,135

As of March 31, 2013, we did not have any leasehold in the Utica Shale that will expire over the next three years.

**Drilling Activity**

The following table summarizes our drilling activity for the years ended December 31, 2010, 2011 and 2012 and the three months ended March 31, 2013. Gross wells reflect the sum of all wells in which we own an interest and includes historical drilling activity in the Appalachian, Arkoma and Piceance Basins. Net wells reflect the sum of our working interests in gross wells.

	Year Ended December 31,						Three Months Ended March 31,	
	2010		2011		2012		2013	
	Gross	Net	Gross	Net	Gross	Net	Gross	Net
<b>Development wells:</b>								
Productive	128	24	135	65	107	92	22	22
Dry	—	—	—	—	—	—	—	—
Total development wells	128	24	135	65	107	92	22	22
<b>Exploratory wells:</b>								
Productive	56	22	74	30	30	24	9	9
Dry	11	5	—	—	—	—	—	—
Total exploratory wells	67	27	74	30	30	24	9	9

### **Delivery Commitments**

We have entered into various firm sales contracts to deliver and sell gas. We believe we will have sufficient production quantities to meet such commitments, but may be required to purchase gas from third parties to satisfy shortfalls should they occur.

As of December 31, 2012, our firm sales commitments through 2017 included:

<u>Year Ending December 31,</u>	<u>Volume of Natural Gas (MMcfe/d)</u>
2013	243
2014	330
2015	320
2016	305
2017	212

In addition, we have firm transportation contracts that require us to deliver products to pipeline transporters or pay demand charges for shortfalls. The minimum demand fees are reflected in our table of contractual obligations. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Debt Agreements and Contractual Obligations."

### **Major Customers**

For the year ended December 31, 2012, sales to South Jersey Resources Group, LLC, Nextera Energy Powermarketing LLC and Dominion Filed Services Inc. represented 23%, 13% and 10% of our total sales, respectively. For the year ended December 31, 2011, sales from our top three customers accounted for 28%, 17%, and 12% of our total sales, respectively. For the year ended December 31, 2010, sales from our top three customers accounted for 23%, 13% and 11% of our total sales, respectively. Although a substantial portion of production is purchased by these major customers, we do not believe the loss of any one or several customers would have a material adverse effect on our business, as other customers or markets would be accessible to us.

### **Title to Properties**

We believe that we have satisfactory title to all of our producing properties in accordance with generally accepted industry standards. As is customary in the industry, in the case of undeveloped properties, often cursory investigation of record title is made at the time of lease acquisition. Investigations are made before the consummation of an acquisition of producing properties and before commencement of drilling operations on undeveloped properties. Individual properties may be subject to burdens that we believe do not materially interfere with the use or affect the value of the properties. Burdens on properties may include:

- customary royalty interests;
- liens incident to operating agreements and for current taxes;
- obligations or duties under applicable laws;
- development obligations under natural gas leases; or
- net profits interests.

### **Seasonality**

Demand for natural gas generally decreases during the spring and fall months and increases during the summer and winter months. However, seasonal anomalies such as mild winters or mild summers

sometimes lessen this fluctuation. In addition, certain natural gas users utilize natural gas storage facilities and purchase some of their anticipated winter requirements during the summer. This can also lessen seasonal demand fluctuations. These seasonal anomalies can increase competition for equipment, supplies and personnel during the spring and summer months, which could lead to shortages and increase costs or delay our operations.

## **Competition**

The oil and natural gas industry is intensely competitive, and we compete with other companies in our industry that have greater resources than we do. Many of these companies not only explore for and produce natural gas, but also carry on refining operations and market petroleum and other products on a regional, national or worldwide basis. These companies may be able to pay more for productive natural gas properties and exploratory prospects or define, evaluate, bid for and purchase a greater number of properties and prospects than our financial or human resources permit and may be able to expend greater resources to attract and maintain industry personnel. In addition, these companies may have a greater ability to continue exploration activities during periods of low natural gas market prices. Our larger competitors may be able to absorb the burden of existing, and any changes to, federal, state and local laws and regulations more easily than we can, which would adversely affect our competitive position. Our ability to acquire additional properties and to discover reserves in the future will be dependent upon our ability to evaluate and select suitable properties and to consummate transactions in a highly competitive environment. In addition, because we have fewer financial and human resources than many companies in our industry, we may be at a disadvantage in bidding for exploratory prospects and producing natural gas properties.

## **Regulation of the Oil and Natural Gas Industry**

Our operations are substantially affected by federal, state and local laws and regulations. In particular, natural gas production and related operations are, or have been, subject to price controls, taxes and numerous other laws and regulations. All of the jurisdictions in which we own or operate producing natural gas and oil properties have statutory provisions regulating the exploration for and production of natural gas and oil, including provisions related to permits for the drilling of wells, bonding requirements to drill or operate wells, the location of wells, the method of drilling and casing wells, the surface use and restoration of properties upon which wells are drilled, sourcing and disposal of water used in the drilling and completion process, and the abandonment of wells. Our operations are also subject to various conservation laws and regulations. These include the regulation of the size of drilling and spacing units or proration units, the number of wells which may be drilled in an area, and the unitization or pooling of crude oil or natural gas wells, as well as regulations that generally prohibit the venting or flaring of natural gas, and impose certain requirements regarding the ratable or fair apportionment of production from fields and individual wells.

Failure to comply with applicable laws and regulations can result in substantial penalties. The regulatory burden on the industry increases the cost of doing business and affects profitability. Although we believe we are in substantial compliance with all applicable laws and regulations, such laws and regulations are frequently amended or reinterpreted. Therefore, we are unable to predict the future costs or impact of compliance. Additional proposals and proceedings that affect the natural gas industry are regularly considered by Congress, the states, the FERC, and the courts. We cannot predict when or whether any such proposals may become effective.

We believe we are in substantial compliance with currently applicable laws and regulations and that continued substantial compliance with existing requirements will not have a material adverse effect on our financial position, cash flows or results of operations. However, current regulatory requirements may change, currently unforeseen environmental incidents may occur or past non-compliance with environmental laws or regulations may be discovered.

### ***Regulation of Production of Natural Gas and Oil***

The production of natural gas and oil is subject to regulation under a wide range of local, state and federal statutes, rules, orders and regulations. Federal, state and local statutes and regulations require permits for drilling operations, drilling bonds and reports concerning operations. All of the states in which we own and operate properties have regulations governing conservation matters, including provisions for the unitization or pooling of natural gas and oil properties, the establishment of maximum allowable rates of production from natural gas and oil wells, the regulation of well spacing or density, and plugging and abandonment of wells. The effect of these regulations is to limit the amount of natural gas and oil that we can produce from our wells and to limit the number of wells or the locations at which we can drill, although we can apply for exceptions to such regulations or to have reductions in well spacing or density. Moreover, each state generally imposes a production or severance tax with respect to the production and sale of oil, natural gas and NGLs within its jurisdiction.

We own interests in properties located onshore in three U.S. states. These states regulate drilling and operating activities by requiring, among other things, permits for the drilling of wells, maintaining bonding requirements in order to drill or operate wells, and regulating the location of wells, the method of drilling and casing wells, the surface use and restoration of properties upon which wells are drilled and the plugging and abandonment of wells. The laws of these states also govern a number of environmental and conservation matters, including the handling and disposing or discharge of waste materials, the size of drilling and spacing units or proration units and the density of wells that may be drilled, unitization and pooling of oil and gas properties and establishment of maximum rates of production from oil and gas wells. Some states have the power to prorate production to the market demand for oil and gas.

The failure to comply with these rules and regulations can result in substantial penalties. Our competitors in the oil and natural gas industry are subject to the same regulatory requirements and restrictions that affect our operations.

### ***Regulation of Transportation and Sales of Natural Gas***

Historically, the transportation and sale for resale of natural gas in interstate commerce have been regulated by agencies of the U.S. federal government, primarily FERC. FERC regulates interstate natural gas transportation rates and service conditions, which affects the marketing of natural gas that we produce, as well as the revenues we receive for sales of our natural gas. Since 1985, FERC has endeavored to make natural gas transportation more accessible to natural gas buyers and sellers on an open and non-discriminatory basis. FERC has stated that open access policies are necessary to improve the competitive structure of the interstate natural gas pipeline industry and to create a regulatory framework that will put natural gas sellers into more direct contractual relations with natural gas buyers by, among other things, unbundling the sale of natural gas from the sale of transportation and storage services.

In the past, the federal government has regulated the prices at which natural gas could be sold. While sales by producers of natural gas can currently be made at uncontrolled market prices, Congress could reenact price controls in the future. Deregulation of wellhead natural gas sales began with the enactment of the Natural Gas Policy Act, or NGPA, and culminated in adoption of the Natural Gas Wellhead Decontrol Act which removed controls affecting wellhead sales of natural gas effective January 1, 1993. The transportation and sale for resale of natural gas in interstate commerce is regulated primarily under the Natural Gas Act, or NGA, and by regulations and orders promulgated under the NGA by FERC. In certain limited circumstances, intrastate transportation and wholesale sales of natural gas may also be affected directly or indirectly by laws enacted by Congress and by FERC regulations.

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Beginning in 1992, FERC issued a series of orders to implement its open access policies. As a result, the interstate pipelines' traditional role as wholesalers of natural gas has been greatly reduced and replaced by a structure under which pipelines provide transportation and storage service on an open access basis to others who buy and sell natural gas. Although FERC's orders do not directly regulate natural gas producers, they are intended to foster increased competition within all phases of the natural gas industry.

The Domenici Barton Energy Policy Act of 2005, or EP Act of 2005, is a comprehensive compilation of tax incentives, authorized appropriations for grants and guaranteed loans, and significant changes to the statutory policy that affects all segments of the energy industry. Among other matters, the EP Act of 2005 amends the NGA to add an anti-market manipulation provision which makes it unlawful for any entity to engage in prohibited behavior to be prescribed by FERC, and furthermore provides FERC with additional civil penalty authority. The EP Act of 2005 provides FERC with the power to assess civil penalties of up to \$1,000,000 per day for violations of the NGA and increases FERC's civil penalty authority under the NGPA from \$5,000 per violation per day to \$1,000,000 per violation per day. The civil penalty provisions are applicable to entities that engage in the sale of natural gas for resale in interstate commerce. On January 19, 2006, FERC issued Order No. 670, a rule implementing the anti-market manipulation provision of the EP Act of 2005, and subsequently denied rehearing. The rules make it unlawful to: (1) in connection with the purchase or sale of natural gas subject to the jurisdiction of FERC, or the purchase or sale of transportation services subject to the jurisdiction of FERC, for any entity, directly or indirectly, to use or employ any device, scheme or artifice to defraud; (2) to make any untrue statement of material fact or omit to make any such statement necessary to make the statements made not misleading; or (3) to engage in any act or practice that operates as a fraud or deceit upon any person. The new anti-market manipulation rule does not apply to activities that relate only to intrastate or other non-jurisdictional sales or gathering, but does apply to activities of gas pipelines and storage companies that provide interstate services, as well as otherwise non-jurisdictional entities to the extent the activities are conducted "in connection with" gas sales, purchases or transportation subject to FERC jurisdiction, which now includes the annual reporting requirements under Order 704. The anti-market manipulation rule and enhanced civil penalty authority reflect an expansion of FERC's NGA enforcement authority.

On December 26, 2007, FERC issued Order 704, a final rule on the annual natural gas transaction reporting requirements, as amended by subsequent orders on rehearing. Under Order 704, wholesale buyers and sellers of more than 2.2 million MMBtus of physical natural gas in the previous calendar year, including natural gas gatherers and marketers, are now required to report, on May 1 of each year, aggregate volumes of natural gas purchased or sold at wholesale in the prior calendar year to the extent such transactions utilize, contribute to, or may contribute to the formation of price indices. It is the responsibility of the reporting entity to determine which individual transactions should be reported based on the guidance of Order 704. Order 704 also requires market participants to indicate whether they report prices to any index publishers, and if so, whether their reporting complies with FERC's policy statement on price reporting.

On November 20, 2008, FERC issued Order 720, a final rule on the daily scheduled flow and capacity posting requirements. Under Order 720, major non-interstate pipelines, defined as certain non-interstate pipelines delivering, on an annual basis, more than an average of 50 million MMBtus of gas over the previous three calendar years, are required to post daily certain information regarding the pipeline's capacity and scheduled flows for each receipt and delivery point that has a design capacity equal to or greater than 15,000 MMBtu per day and interstate pipelines are required to post information regarding the provision of no-notice service. In October 2011, Order 720, as clarified, was vacated by the Court of Appeals for the Fifth Circuit with respect to its application to non-interstate pipelines. In December 2011, the Fifth Circuit confirmed that Order 720, as clarified, remained

applicable to interstate pipelines with respect to posting information regarding the provision of no-notice service.

We cannot accurately predict whether FERC's actions will achieve the goal of increasing competition in markets in which our natural gas is sold. Additional proposals and proceedings that might affect the natural gas industry are pending before FERC and the courts. The natural gas industry historically has been very heavily regulated. Therefore, we cannot provide any assurance that the less stringent regulatory approach recently established by FERC will continue. However, we do not believe that any action taken will affect us in a way that materially differs from the way it affects other natural gas producers.

Gathering service, which occurs upstream of jurisdictional transmission services, is regulated by the states onshore and in state waters. Although its policy is still in flux, FERC has reclassified certain jurisdictional transmission facilities as non-jurisdictional gathering facilities, which has the tendency to increase our costs of getting gas to point of sale locations. State regulation of natural gas gathering facilities generally include various safety, environmental and, in some circumstances, nondiscriminatory-take requirements. Although such regulation has not generally been affirmatively applied by state agencies, natural gas gathering may receive greater regulatory scrutiny in the future.

Section 1(b) of the NGA exempts natural gas gathering facilities from regulation by FERC as a natural gas company under the NGA. We believe that the natural gas pipelines in our gathering systems meet the traditional tests FERC has used to establish a pipeline's status as a gatherer not subject to regulation as a natural gas company. However, the distinction between FERC-regulated transmission services and federally unregulated gathering services is the subject of ongoing litigation, so the classification and regulation of our gathering facilities are subject to change based on future determinations by FERC, the courts or Congress.

Our sales of natural gas are also subject to requirements under the Commodity Exchange Act, or CEA, and regulations promulgated thereunder by the Commodity Futures Trading Commission, or CFTC. The CEA prohibits any person from manipulating or attempting to manipulate the price of any commodity in interstate commerce or futures on such commodity. The CEA also prohibits knowingly delivering or causing to be delivered false or misleading or knowingly inaccurate reports concerning market information or conditions that affect or tend to affect the price of a commodity.

Intrastate natural gas transportation is also subject to regulation by state regulatory agencies. The basis for intrastate regulation of natural gas transportation and the degree of regulatory oversight and scrutiny given to intrastate natural gas pipeline rates and services varies from state to state. Insofar as such regulation within a particular state will generally affect all intrastate natural gas shippers within the state on a comparable basis, we believe that the regulation of similarly situated intrastate natural gas transportation in any states in which we operate and ship natural gas on an intrastate basis will not affect our operations in any way that is of material difference from those of our competitors. Like the regulation of interstate transportation rates, the regulation of intrastate transportation rates affects the marketing of natural gas that we produce, as well as the revenues we receive for sales of our natural gas.

Changes in law and to FERC policies and regulations may adversely affect the availability and reliability of firm and/or interruptible transportation service on interstate pipelines, and we cannot predict what future action FERC will take. We do not believe, however, that any regulatory changes will affect us in a way that materially differs from the way they will affect other natural gas producers, gatherers and marketers with which we compete.



## **Regulation of Environmental and Occupational Safety and Health Matters**

Our natural gas and oil exploration and production operations are subject to numerous stringent federal, regional, state and local statutes and regulations governing occupational safety and health, the discharge of materials into the environment or otherwise relating to environmental protection, some of which carry substantial administrative, civil and criminal penalties for failure to comply. These laws and regulations may require the acquisition of a permit before drilling or other regulated activity commences, restrict the types, quantities and concentrations of various substances that can be released into the environment in connection with drilling, production and transporting through pipelines, govern the sourcing and disposal of water used in the drilling and completion process, limit or prohibit drilling activities in certain areas and on certain lands lying within wilderness, wetlands, frontier and other protected areas, require some form of remedial action to prevent or mitigate pollution from former operations such as plugging abandoned wells or closing earthen pits, establish specific safety and health criteria addressing worker protection and impose substantial liabilities for pollution resulting from operations or failure to comply with regulatory filings. In addition, these laws and regulations may restrict the rate of production.

The following is a summary of the more significant existing environmental and occupational health and safety laws and regulations, as amended from time to time, to which our business operations are subject and for which compliance may have a material adverse impact on our capital expenditures, results of operations or financial position.

### ***National Environmental Policy Act***

Natural gas and oil exploration and production activities on federal lands are subject to the National Environmental Policy Act, or the NEPA. NEPA requires federal agencies, including the Departments of Interior and Agriculture, to evaluate major agency actions having the potential to significantly impact the environment. In the course of such evaluations, an agency prepares an Environmental Assessment to evaluate the potential direct, indirect and cumulative impacts of a proposed project. If impacts are considered significant, the agency will prepare a more detailed environmental impact study, or EIS, that is made available for public review and comment. All of our current exploration and production activities, as well as proposed exploration and development plans, on federal lands require governmental permits that are subject to the requirements of NEPA. This environmental impact assessment process has the potential to delay or limit, or increase the cost of, the development of natural gas and oil projects. Authorizations under NEPA also are subject to protest, appeal or litigation, which can delay or halt projects.

### ***Hazardous Substances and Waste Handling***

The Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA, also known as the "Superfund" law, and comparable state laws impose liability, without regard to fault or the legality of the original conduct, on certain classes of persons that are considered to have contributed to the release of a "hazardous substance" into the environment. These persons include the current and past owner or operator of the disposal site or the site where the release occurred and companies that disposed or arranged for the disposal of the hazardous substances at the site where the release occurred. Under CERCLA, such persons may be subject to joint and several strict liability for the costs of cleaning up the hazardous substances that have been released into the environment and for damages to natural resources, and it is not uncommon for neighboring landowners and other third parties to file claims for personal injury and property damage allegedly caused by the hazardous substances released into the environment. We are able to control directly the operation of only those wells with respect to which we act as operator. Notwithstanding our lack of direct control over wells operated by others, the failure of an operator other than us to comply with applicable environmental regulations may, in certain circumstances, be attributed to us. We generate materials in the course of

our operations that may be regulated as hazardous substances but we are unaware of any liabilities for which we may be held responsible that would materially and adversely affect us.

The Resource Conservation and Recovery Act, or RCRA, and analogous state laws, impose detailed requirements for the generation, handling, storage, treatment and disposal of nonhazardous and hazardous solid wastes. RCRA specifically excludes drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy from regulation as hazardous wastes. However, these wastes may be regulated by the EPA or state agencies under RCRA's less stringent nonhazardous solid waste provisions, state laws or other federal laws. Moreover, it is possible that these particular oil and natural gas exploration, development and production wastes now classified as nonhazardous solid wastes could be classified as hazardous wastes in the future. A loss of the RCRA exclusion for drilling fluids, produced waters and related wastes could result in an increase in our costs to manage and dispose of generated wastes, which could have a material adverse effect on our results of operations and financial position. In addition, in the course of our operations, we generate some amounts of ordinary industrial wastes, such as paint wastes, waste solvents, laboratory wastes and waste compressor oils that are regulated as hazardous wastes. Although the costs of managing hazardous waste may be significant, we do not believe that our costs in this regard are materially more burdensome than those for similarly situated companies.

We currently own, lease, or operate numerous properties that have been used for oil and natural gas exploration and production activities for many years. Although we believe that we have utilized operating and waste disposal practices that were standard in the industry at the time, hazardous substances, wastes, or petroleum hydrocarbons may have been released on, under or from the properties owned or leased by us, or on, under or from other locations, including off-site locations, where such substances have been taken for recycling or disposal. In addition, some of our properties have been operated by third parties or by previous owners or operators whose treatment and disposal of hazardous substances, wastes, or petroleum hydrocarbons was not under our control. These properties and the substances disposed or released on, under or from them may be subject to CERCLA, RCRA and analogous state laws. Under such laws, we could be required to undertake response or corrective measures, which could include removal of previously disposed substances and wastes, cleanup of contaminated property or performance of remedial plugging or pit closure operations to prevent future contamination.

#### ***Water Discharges***

The Federal Water Pollution Control Act, or the Clean Water Act, and comparable state laws impose restrictions and strict controls regarding the discharge of pollutants, including produced waters and other oil and natural gas wastes, into federal and state waters. The discharge of pollutants into regulated waters is prohibited, except in accordance with the terms of a permit issued by the EPA or the state. The discharge of dredge and fill material in regulated waters, including wetlands, is also prohibited, unless authorized by a permit issued by the U.S. Army Corps of Engineers. Obtaining permits has the potential to delay the development of natural gas and oil projects. These laws and any implementing regulations provide for administrative, civil and criminal penalties for any unauthorized discharges of oil and other substances in reportable quantities and may impose substantial potential liability for the costs of removal, remediation and damages.

Pursuant to these laws and regulations, we may be required to obtain and maintain approvals or permits for the discharge of wastewater or storm water and are required to develop and implement spill prevention, control and countermeasure plans, also referred to as "SPCC plans," in connection with on-site storage of significant quantities of oil. We believe that we maintain all required discharge permits necessary to conduct our operations, and further believe we are in substantial compliance with the terms thereof. We are currently undertaking a review of recently acquired natural gas properties to

determine the need for new or updated SPCC plans and, where necessary, we will be developing or upgrading such plans implementing the physical and operation controls imposed by these plans, the costs of which are not expected to be substantial.

### ***Air Emissions***

The federal Clean Air Act and comparable state laws restrict the emission of air pollutants from many sources, such as, for example, compressor stations, through air emissions standards, construction and operating permitting programs and the imposition of other compliance requirements. These laws and regulations may require us to obtain pre-approval for the construction or modification of certain projects or facilities expected to produce or significantly increase air emissions, obtain and strictly comply with stringent air permit requirements or utilize specific equipment or technologies to control emissions of certain pollutants. The need to obtain permits has the potential to delay the development of oil and natural gas projects. Over the next several years, we may be required to incur certain capital expenditures for air pollution control equipment or other air emissions related issues. For example, on August 16, 2012, the EPA published final rules under the Clean Air Act that subject oil and natural gas production, processing, transmission and storage operations to regulation under the New Source Performance Standards, or NSPS, and National Emission Standards for Hazardous Air Pollutants, or NESHAP, programs. With regards to production activities, these final rules require, among other things, the reduction of volatile organic compound emissions from three subcategories of fractured and refractured gas wells for which well completion operations are conducted: wildcat (exploratory) and delineation gas wells; low reservoir pressure non-wildcat and non-delineation gas wells; and all "other" fractured and refractured gas wells. All three subcategories of wells must route flow back emissions to a gathering line or be captured and combusted using a combustion device such as a flare after October 15, 2012. However, the "other" wells must use reduced emission completions, also known as "green completions," with or without combustion devices, after January 1, 2015. These regulations also establish specific new requirements regarding emissions from production-related wet seal and reciprocating compressors, effective October 15, 2012 and from pneumatic controllers and storage vessels, effective October 15, 2013. EPA received numerous requests for reconsideration of these rules from both industry and the environmental community, and court challenges to the rules were also filed. EPA intends to issue revised rules in 2013 that are likely responsive to some of these requests. For example, on April 12, 2013 EPA published a proposed amendment extending compliance dates for certain storage vessels. Compliance with these and other air pollution control and permitting requirements has the potential to delay the development of natural gas and oil projects and increase our costs of development and production, which costs could be significant. However, we do not believe that compliance with such requirements will have a material adverse effect on our operations.

### ***Regulation of "Greenhouse Gas" Emissions***

In response to findings that emissions of carbon dioxide, methane and other greenhouse gases, or GHGs, present an endangerment to public health and the environment, the EPA has adopted regulations under existing provisions of the federal Clean Air Act that, among other things, establish PSD construction and Title V operating permit reviews for certain large stationary sources that are potential major sources of GHG emissions. Facilities required to obtain PSD permits for their GHG emissions also will be required to meet "best available control technology" standards that will be established by the states or, in some cases, by the EPA on a case-by-case basis. These EPA rulemakings could adversely affect our operations and restrict or delay our ability to obtain air permits for new or modified sources. In addition, the EPA has adopted rules requiring the monitoring and reporting of GHG emissions from specified onshore and offshore oil and gas production sources in the United States on an annual basis, which include certain of our operations. We are monitoring GHG emissions from our operations in accordance with the GHG emissions reporting rule and believe that our monitoring activities are in substantial compliance with applicable reporting obligations.

While Congress has from time to time considered legislation to reduce emissions of GHGs, there has not been significant activity in the form of adopted legislation to reduce GHG emissions at the federal level in recent years. In the absence of such federal climate legislation, a number of state and regional efforts have emerged that are aimed at tracking and/or reducing GHG emissions by means of cap and trade programs that typically require major sources of GHG emissions, such as electric power plants, to acquire and surrender emission allowances in return for emitting those GHGs. If Congress undertakes comprehensive tax reform in the coming year, it is possible that such reform may include a carbon tax, which could impose additional direct costs on operations and reduce demand for refined products. Although it is not possible at this time to predict how legislation or new regulations that may be adopted to address GHG emissions would impact our business, any such future laws and regulations imposing reporting obligations on, or limiting emissions of GHGs from, our equipment and operations could require us to incur costs to reduce emissions of GHGs associated with our operations. Severe limitations on GHG emissions could adversely affect demand for the oil and natural gas we produce. Finally, it should be noted that some scientists have concluded that increasing concentrations of GHGs in the Earth's atmosphere may produce climate changes that have significant physical effects, such as increased frequency and severity of storms, floods and other climatic event; if any such effects were to occur, they could have an adverse effect on our exploration and production operations.

### *Hydraulic Fracturing Activities*

Hydraulic fracturing is an important and common practice that is used to stimulate production of natural gas and/or oil from dense subsurface rock formations. The hydraulic fracturing process involves the injection of water, sand, and chemicals under pressure through a cased and cemented wellbore into targeted subsurface formations to fracture the surrounding rock and stimulate production. We regularly use hydraulic fracturing as part of our operations as does most of the domestic oil and natural gas industry. Hydraulic fracturing typically is regulated by state oil and natural gas commissions, but the EPA has asserted federal regulatory authority pursuant to the SDWA over certain hydraulic fracturing activities involving the use of diesel fuels and published draft permitting guidance in May 2012 addressing the performance of such activities using diesel fuels. In November 2011, the EPA announced its intent to develop and issue regulations under the Toxic Substances Control Act to require companies to disclose information regarding the chemicals used in hydraulic fracturing and the agency currently plans to issue a Notice of Proposed Rulemaking that would seek public input on the design and scope of such disclosure regulations.

In addition, Congress has from time to time considered legislation to provide for federal regulation of hydraulic fracturing under the SDWA and to require disclosure of the chemicals used in the hydraulic fracturing process. At the state level, several states have adopted or are considering legal requirements that could impose more stringent permitting, disclosure, and well construction requirements on hydraulic fracturing activities. Local government also may seek to adopt ordinances within their jurisdictions regulating the time, place and manner of drilling activities in general or hydraulic fracturing activities in particular. We believe that we follow applicable standard industry practices and legal requirements for groundwater protection in our hydraulic fracturing activities. Nonetheless, if new or more stringent federal, state, or local legal restrictions relating to the hydraulic fracturing process are adopted in areas where we operate, we could incur potentially significant added costs to comply with such requirements, experience delays or curtailment in the pursuit of exploration, development, or production activities, and perhaps even be precluded from drilling wells.

In addition, certain governmental reviews have been conducted or are underway that focus on environmental aspects of hydraulic fracturing practices. The White House Council on Environmental Quality is coordinating an administration-wide review of hydraulic fracturing practices. The EPA has commenced a study of the potential environmental effects of hydraulic fracturing on drinking water and groundwater, with a first progress report outlining work currently underway by the agency released on

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December 21, 2012 and a final report drawing conclusions about the potential impacts of hydraulic fracturing on drinking water resources expected to be available for public comment and peer review by 2014. Moreover, the EPA is developing effluent limitations for the treatment and discharge of wastewater resulting from hydraulic fracturing activities and plans to propose these standards by 2014. In addition, the U.S. Department of the Interior published a revised proposed rule on May 24, 2013 that would implement updated requirements for hydraulic fracturing activities on federal lands, including new requirements relating to public disclosure, well bore integrity and handling of flowback water. Other governmental agencies, including the U.S. Department of Energy have evaluated or are evaluating various other aspects of hydraulic fracturing. These ongoing or proposed studies, depending on their degree of pursuit and any meaningful results obtained, could spur initiatives to further regulate hydraulic fracturing under the SDWA or other regulatory mechanisms.

### ***Occupational Safety and Health Act***

We are also subject to the requirements of the federal Occupational Safety and Health Act, as amended, or OSHA, and comparable state laws that regulate the protection of the health and safety of employees. In addition, OSHA's hazard communication standard, the Emergency Planning and Community Right to Know Act and implementing regulations and similar state statutes and regulations require that information be maintained about hazardous materials used or produced in our operations and that this information be provided to employees, state and local government authorities and citizens. We believe that our operations are in substantial compliance with the applicable worker health and safety requirements.

### ***Endangered Species Act***

The federal Endangered Species Act, or ESA, was established to protect endangered and threatened species. Pursuant to the ESA, if a species is listed as threatened or endangered, restrictions may be imposed on activities adversely affecting that species' habitat. Similar protections are offered to migratory birds under the Migratory Bird Treaty Act. We may conduct operations on natural gas and oil leases in areas where certain species that are listed as threatened or endangered are known to exist and where other species, such as the sage grouse, that potentially could be listed as threatened or endangered under the ESA may exist. The U.S. Fish and Wildlife Service may designate critical habitat and suitable habitat areas that it believes are necessary for survival of a threatened or endangered species. A critical habitat or suitable habitat designation could result in further material restrictions to federal land use and may materially delay or prohibit land access for natural gas and oil development. Moreover, as a result of a settlement approved by the U.S. District Court for the District of Columbia in September 2011, the U.S. Fish and Wildlife Service is required to make a determination on listing of more than 250 species as endangered or threatened under the ESA by no later than completion of the agency's 2017 fiscal year. The designation of previously unprotected species as threatened or endangered in areas where underlying property operations are conducted could cause us to incur increased costs arising from species protection measures or could result in limitations on our exploration and production activities that could have an adverse impact on our ability to develop and produce reserves. If we were to have a portion of our leases designated as critical or suitable habitat, it could adversely impact the value of our leases.

In summary, we believe we are in substantial compliance with currently applicable environmental laws and regulations. Although we have not experienced any material adverse effect from compliance with environmental requirements, there is no assurance that this will continue. We did not have any material capital or other non-recurring expenditures in connection with complying with environmental laws or environmental remediation matters in 2012, nor do we anticipate that such expenditures will be material in 2013.

## **Employees**

As of March 31, 2013, we had 163 full-time employees, including 10 in executive, finance, treasury and administration, 18 in geology, 48 in production and engineering, 20 in accounting, 54 in land, and 13 in midstream. We also employed approximately 141 contract personnel who assist our full-time employees with specific tasks. Our future success will depend partially on our ability to attract, retain and motivate qualified personnel. We are not a party to any collective bargaining agreements and have not experienced any strikes or work stoppages. We consider our relations with our employees to be satisfactory. We utilize the services of independent contractors to perform various field and other services.

## **Legal Proceedings**

We are party to various legal proceedings and claims in the ordinary course of our business. We believe certain of these matters will be covered by insurance and that the outcome of other matters will not have a material adverse effect on our consolidated financial position, results of operations or liquidity.

In March 2011, we received orders for compliance from federal regulatory agencies, including the U. S. Environmental Protection Agency, or the EPA, relating to certain of our activities in West Virginia. The orders allege that certain of our operations at several well sites are in non-compliance with certain environmental regulations, such as unpermitted discharges of fill material into wetlands or waters of the United States that are potentially in violation of the Clean Water Act. We have responded to all pending orders and are actively cooperating with the relevant agencies. No fine or penalty relating to these matters has been proposed at this time, but we believe that these actions will result in monetary sanctions exceeding \$100,000. In addition, we expect to incur additional costs to remediate these well locations in order to bring them into compliance with applicable environmental laws and regulations. We have not, however, been required to suspend our operations at these locations to date and our management team does not expect these matters to have a material adverse effect on our financial condition, results of operations or cash flows.

## MANAGEMENT

### Directors and Executive Officers

The following table sets forth names, ages and titles of our directors and executive officers as of June 30, 2013.

<u>Name</u>	<u>Age</u>	<u>Title</u>
Peter R. Kagan	45	Director
W. Howard Keenan, Jr.	62	Director
Christopher R. Manning	45	Director
Paul M. Rady	59	Chairman of the Board of Directors and Chief Executive Officer
Glen C. Warren, Jr.	57	Director, President, Chief Financial Officer and Secretary
Kevin J. Kilstrom	58	Vice President—Production
Alvyn A. Schopp	54	Vice President—Accounting & Administration and Treasurer
Ward D. McNeilly	62	Vice President—Reserves, Planning and Midstream

Set forth below is the description of the backgrounds of our directors and executive officers.

*Peter R. Kagan* has served as a director since 2004. Mr. Kagan has been with Warburg Pincus since 1997 and leads the firm's investment activities in energy and natural resources. He is also a member of the firm's Executive Management Group. Mr. Kagan received a B.A. degree cum laude from Harvard College and J.D. and M.B.A. degrees with honors from the University of Chicago. Prior to joining Warburg Pincus, he worked in investment banking at Salomon Brothers in both New York and Hong Kong. Mr. Kagan currently also serves on the boards of directors of the following public companies: Laredo Petroleum Holdings, Inc., MEG Energy Corp. and Targa Resources Corp., as well as the boards of several private companies.

Mr. Kagan has significant experience with energy companies and investments and broad knowledge of the oil and gas industry. We believe his background and skill set make Mr. Kagan well-suited to serve as a member of our board of directors.

*W. Howard Keenan, Jr.* has served as a director since 2004. Mr. Keenan has over thirty years of experience in the financial and energy businesses. Since 1997, he has been a Member of Yorktown Partners LLC, a private investment manager focused on the energy industry. Mr. Keenan currently serves on the Board of Directors of Concho Resources Inc. and GeoMet, Inc. From 1975 to 1997, he was in the Corporate Finance Department of Dillon, Read & Co. Inc. and active in the private equity and energy areas, including the founding of the first Yorktown Partners fund in 1991. He is serving or has served as a director of multiple Yorktown Partners portfolio companies. Mr. Keenan holds an B.A. degree cum laude from Harvard College and an M.B.A. degree from Harvard University.

Mr. Keenan has significant experience with energy companies and investments and broad knowledge of the oil and gas industry. We believe his background and skill set make Mr. Keenan well-suited to serve as a member of our board of directors.

*Christopher R. Manning* has served as a director since 2005. Mr. Manning has been a Partner with Trilantic Capital Partners since May 2009, and is currently a member of the Executive Committee. His primary focus is on investments in the energy sector. Mr. Manning joined Lehman Brothers Merchant Banking in 2000 and was concurrently the Head of Lehman Brothers' Investment Management Division, including both the Asset Management and Private Equity businesses, in Asia-Pacific from 2006 to 2008. He was also a member of the Global Investment Management Division Executive Committee and the Private Equity Division Operating Committee. Prior to Lehman Brothers, Mr. Manning was the chief financial officer of The Wing Group, a developer of international power projects. Prior to The Wing Group, he was in the investment banking department of Kidder, Peabody & Co., where he worked on M&A and corporate finance transactions. Mr. Manning currently



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serves on the boards of Enduring Resources, the Cross Group, Templar Energy, Trail Ridge Energy Partners II, VantaCore Partners, and Velvet Energy. Mr. Manning holds an M.B.A. from The Wharton School of the University of Pennsylvania and a B.B.A. from the University of Texas at Austin.

Mr. Manning has significant experience with energy companies and investments and broad knowledge of the oil and gas industry. We believe his background and skill set make Mr. Manning well-suited to serve as a member of our board of directors.

*Paul M. Rady* has served as Chief Executive Officer and Chairman of the Board of Directors since May 2004. Mr. Rady also served as Chief Executive Officer and Chairman of the Board of Directors of our predecessor company, Antero Resources Corporation, from its founding in 2002 to its ultimate sale to XTO Energy, Inc. in April 2005. Prior to Antero Resources Corporation, Mr. Rady served as President, CEO and Chairman of Pennaco Energy from 1998 until its sale to Marathon in early 2001. Prior to Pennaco, Mr. Rady was with Barrett Resources from 1990 until 1998 where he initially was recruited as Chief Geologist in 1990, then served as Exploration Manager, EVP Exploration, President, COO and Director and ultimately CEO. Mr. Rady began his career with Amoco where he served 10 years as a geologist focused on the Rockies and Mid-Continent. Mr. Rady is the managing member of Salisbury Investment Holdings, LLC. Mr. Rady holds a B.A. in Geology from Western State College of Colorado and M.Sc. in Geology from Western Washington University.

Mr. Rady's significant experience as a chief executive of oil and gas companies, together with his training as a geologist and broad industry knowledge, enable Mr. Rady to provide the board with executive counsel on a full range of business, strategic and professional matters.

*Glen C. Warren, Jr.* has served as President, Chief Financial Officer and Secretary and as a director since May 2004. Mr. Warren also served as President and Chief Financial Officer and as a director of our predecessor company, Antero Resources Corporation, from its founding in 2002 to its ultimate sale to XTO Energy, Inc. in April 2005. Prior to Antero Resources Corporation, Mr. Warren served as EVP, CFO and Director of Pennaco Energy from 1998 until its sale to Marathon in early 2001. Mr. Warren spent 10 years as a natural resources investment banker focused on equity and debt financing and M&A advisory with Lehman Brothers, Dillon Read and Kidder Peabody. Mr. Warren began his career as a landman in the Gulf Coast region with Amoco, where he spent six years. Mr. Warren is the managing member of Canton Investment Holdings, LLC. Mr. Warren holds a B.A. from the University of Mississippi, a J.D. from the University of Mississippi School of Law and an M.B.A. from the Anderson School of Management at U.C.L.A.

Mr. Warren's significant experience as a chief financial officer of oil and gas companies, together with his experience as an investment banker and broad industry knowledge, enable Mr. Warren to provide the board with executive counsel on a full range of business, strategic, financial and professional matters.

*Kevin J. Kilstrom* has served as Vice President of Production since June 2007. Mr. Kilstrom was a Manager of Petroleum Engineering with AGL Energy of Sydney, Australia from 2006 to 2007. Prior to AGL, Mr. Kilstrom was with Marathon Oil as an Engineering Consultant and Asset Manager from 2003 to 2006 and as a Business Unit Manager for Marathon's Powder River coal bed methane assets from 2001 to 2003. Mr. Kilstrom also served as a member of the board of directors of three Marathon subsidiaries from October 2003 through May 2005. Mr. Kilstrom was an Operations Manager and reserve engineer at Pennaco Energy from 1999 to 2001. Mr. Kilstrom was at Amoco for more than 22 years prior to 1999. Mr. Kilstrom holds a B.S. in Engineering from Iowa State University and an M.B.A. from DePaul University.

*Alvyn A. Schopp* has served as Vice President of Accounting and Administration and Treasurer since January 2005. Mr. Schopp also served as Controller and Treasurer from 2003 to 2005 and as Vice President of Accounting and Administration and Treasurer of our predecessor company, Antero



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Resources Corporation, from January 2005 until its ultimate sale to XTO Energy, Inc. in April 2005. From 2002 to 2003, Mr. Schopp was an Executive and Financial Consultant with Duke Energy Field Services. From 1993 to 2000, Mr. Schopp was CFO, Director and ultimately CEO of T-Netix. From 1980 to 1993 Mr. Schopp was with KPMG LLP, most recently as a Senior Manager. Mr. Schopp holds a B.B.A. from Drake University.

*Ward D. McNeilly* serves as Vice President of Reserves, Planning & Midstream, and has been with the Company since October 2010. Mr. McNeilly has 34 years of experience in oil and gas asset management, operations, and reservoir management. From 2007 to October 2010, Mr. McNeilly was BHP Billiton's Gulf of Mexico Operations Manager. From 1996 through 2007, Mr. McNeilly served in various North Sea and Gulf of Mexico Deepwater operations and asset management positions with Amoco and then BP. Mr. McNeilly served in a number of different domestic and international positions with Amoco from 1979 to 1996. Mr. McNeilly holds a B.S. in Geological Engineering from the Mackay School of Mines at the University of Nevada.

### **Board of Directors**

Our board of directors currently consists of five members, Messrs. Kagan, Keenan, Manning, Rady and Warren. As described in "Corporate Reorganization—Limited Liability Company Agreement of Antero Investment," the board of directors of Antero Investment is expected to consist of those same individuals following the completion of this offering. The limited liability company agreement that Antero Investment is expected to adopt will provide that Antero Investment and its members will cooperate to ensure their nomination to, and vote our shares of common stock in favor of their election to, our board of directors. We anticipate that our board will determine that each of Messrs. Kagan, Keenan and Manning are independent under the independence standards of the NYSE.

In addition, we intend to appoint additional independent directors to our board of directors in connection with and following the completion of this offering to meet the NYSE's phase-in requirements for the composition of the audit committee following an initial public offering.

In evaluating director candidates, we will assess whether a candidate possesses the integrity, judgment, knowledge, experience, skills and expertise that are likely to enhance the board's ability to manage and direct our affairs and business, including, when applicable, to enhance the ability of the committees of the board to fulfill their duties. We currently are in the process of identifying individuals who meet these standards and the relevant independence requirements. Our directors hold office until the earlier of their death, resignation, removal or disqualification or until their successors have been elected and qualified.

### **Status as a "Controlled Company"**

Because Antero Investment will own a majority of our outstanding common stock following the completion of this offering, we expect to be a "controlled company" under NYSE corporate governance standards. A controlled company need not comply with NYSE corporate governance rules that require its board of directors to have a majority of independent directors and independent compensation and nominating and corporate governance committees. Notwithstanding our status as a controlled company, we will remain subject to the NYSE corporate governance standard that requires us to have an audit committee composed entirely of independent directors. As a result, we must have at least one independent director on our audit committee by the date our common stock is listed on the NYSE, at least two independent directors within 90 days of the listing date and at least three independent directors within one year of the listing date.

While these exemptions will apply to us as long as we remain a "controlled company," we expect that our board of directors will nonetheless consist of a majority of independent directors within the meaning of the NYSE listing standards currently in effect.

## **Committees of the Board of Directors**

Upon the conclusion of this offering, we intend to have an audit committee, a compensation committee and a nominating and corporate governance committee of our board of directors, and may have such other committees as the board of directors shall determine from time to time. We anticipate that each of the standing committees of the board of directors will have the composition and responsibilities described below.

### ***Audit Committee***

We anticipate that following completion of this offering, our audit committee will consist of at least one director who will be independent under the rules of the SEC. As required by the rules of the SEC and listing standards of the NYSE, the audit committee will consist solely of independent directors. SEC rules also require that a public company disclose whether or not its audit committee has an "audit committee financial expert" as a member. An "audit committee financial expert" is defined as a person who, based on his or her experience, possesses the attributes outlined in such rules. We anticipate that at least one of our independent directors will satisfy the definition of "audit committee financial expert."

This committee will oversee, review, act on and report on various auditing and accounting matters to our board of directors, including: the selection of our independent accountants, the scope of our annual audits, fees to be paid to the independent accountants, the performance of our independent accountants and our accounting practices. In addition, the audit committee will oversee our compliance programs relating to legal and regulatory requirements. We expect to adopt an audit committee charter defining the committee's primary duties in a manner consistent with the rules of the SEC and applicable stock exchange or market standards.

### ***Compensation Committee***

Because we will be a "controlled company" within the meaning of the NYSE corporate governance standards, we will not be required to have a compensation committee composed entirely of independent directors. However, we nevertheless expect that we will have a compensation committee following the completion of this offering. This committee will establish salaries, incentives and other forms of compensation for officers and other employees. Our compensation committee will also administer our incentive compensation and benefit plans. We expect to adopt a compensation committee charter defining the committee's primary duties in a manner consistent with the rules of the SEC and applicable stock exchange or market standards.

### ***Nominating and Corporate Governance Committee***

Because we will be a "controlled company" within the meaning of the NYSE corporate governance standards, we will not be required to have a nominating and corporate governance committee. However, we nevertheless expect that we will have a nominating and corporate governance committee comprised of three independent directors under the listing standards of the NYSE following the completion of this offering.

This committee will identify, evaluate and recommend qualified nominees to serve on our board of directors, develop and oversee our internal corporate governance processes and maintain a management succession plan. We expect to adopt a nominating and corporate governance committee charter defining the committee's primary duties in a manner consistent with the rules of the SEC and applicable stock exchange or market standards.

### **Compensation Committee Interlocks and Insider Participation**

None of our executive officers serve on the board of directors or compensation committee of a company that has an executive officer that serves on our board or compensation committee. No member of our board is an executive officer of a company in which one of our executive officers serves as a member of the board of directors or compensation committee of that company.

### **Code of Business Conduct and Ethics**

Prior to the completion of this offering, our board of directors will adopt a code of business conduct and ethics applicable to our employees, directors and officers, in accordance with applicable U.S. federal securities laws and the corporate governance rules of the NYSE. Any waiver of this code may be made only by our board of directors and will be promptly disclosed as required by applicable U.S. federal securities laws and the corporate governance rules of the NYSE.

### **Corporate Governance Guidelines**

Prior to the completion of this offering, our board of directors will adopt corporate governance guidelines in accordance with the corporate governance rules of the NYSE.

**EXECUTIVE COMPENSATION****Named Executive Officers**

For fiscal year 2012, our named executive officers were:

<u>Name</u>	<u>Principal Position</u>
Paul M. Rady	Chairman of the Board of Directors and Chief Executive Officer
Glen C. Warren, Jr.	Director, President, Chief Financial Officer and Secretary
Kevin J. Kilstrom	Vice President—Production
Alvyn A. Schopp	Vice President—Accounting and Administration

Prior to the closing of this offering, the Compensation Committee of Antero Resources LLC's Board of Directors approved all compensation decisions for our Named Executive Officers. We refer to the Compensation Committee herein as the LLC Compensation Committee.

**Summary Compensation Table**

The following table summarizes, with respect to our Named Executive Officers, information relating to the compensation earned for services rendered in all capacities during the fiscal years ended December 31, 2012 and 2011.

<u>Name and Principal Position</u>	<u>Year</u>	<u>Salary (\$)</u>	<u>Bonus(1) (\$)</u>	<u>Total (\$)</u>
Paul M. Rady <i>(Chairman of the Board of Directors and Chief Executive Officer)</i>	2012	\$ 516,156	\$ 1,000,000	\$ 1,516,156
	2011	\$ 475,000	\$ 800,000	\$ 1,275,000
Glen C. Warren, Jr. <i>(Director, President and Chief Financial Officer and Secretary)</i>	2012	\$ 426,156	\$ 825,000	\$ 1,251,156
	2011	\$ 395,000	\$ 625,000	\$ 1,020,000
Kevin J. Kilstrom <i>(Vice President—Production)</i>	2012	\$ 311,156	\$ 400,000	\$ 711,156
	2011	\$ 290,000	\$ 300,000	\$ 590,000
Alvyn A. Schopp <i>(Vice President—Accounting and Administration)</i>	2012	\$ 311,156	\$ 400,000	\$ 711,156
	2011	\$ 290,000	\$ 300,000	\$ 590,000

- (1) Bonus compensation for fiscal 2011 and fiscal 2012 represents the aggregate amount of the annual discretionary cash bonuses paid to each Named Executive Officer.

**Salary and Cash Incentive Awards in Proportion to Total Compensation**

We paid 100% of each Named Executive Officer's total compensation for fiscal 2012 in the form of base salary and discretionary annual cash bonuses. Such bonuses were determined in the discretion of the LLC Compensation Committee without regard to any objective performance metrics.

**Outstanding Equity Awards at 2012 Fiscal Year-End**

None of the Named Executive Officers held any options or unvested stock awards as of December 31, 2012.

### **Employment, Severance or Change in Control Agreements**

We historically have not maintained any employment, severance or change in control agreements with any of our Named Executive Officers. In addition, none of the Named Executive Officers are entitled to any payments or other benefits in connection with a termination of their employment or a change in control. We anticipate entering into employment agreements with each of our Named Executive Officers in connection with the closing of this offering.

### **Compensation of Directors**

We did not award any compensation to our non-employee directors during 2012. Going forward, our board of directors believes that attracting and retaining qualified non-employee directors will be critical to the future value growth and governance of our company. Our board of directors also believes that the compensation package for our non-employee directors should require a significant portion of the total compensation package to be equity-based to align the interest of these directors with our stockholders.

We are reviewing the non-employee compensation package paid by our peer group and are considering a non-employee director compensation program.

Directors who are also our employees will not receive any additional compensation for their service on our board of directors.

We expect that each director will be reimbursed for (i) travel and miscellaneous expenses to attend meetings and activities of our board of directors or its committees; (ii) travel and miscellaneous expenses related to such director's participation in general education and orientation program for directors; and (iii) travel and miscellaneous expenses for each director's spouse who accompanies a director to attend meetings and activities of our board of directors or any of our committees.

## CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

### Corporate Reorganization

In connection with our corporate reorganization, we will engage in transactions with certain affiliates and our existing equity holders, including the contribution of our midstream business to Antero Midstream. See "Corporate Reorganization" for a description of these transactions.

### Historical Transactions with Affiliates

Antero Resources LLC was formed in connection with our November 2009 corporate reorganization. The limited liability company agreement of Antero Resources LLC provides for a number of different classes of units, which are owned by its equity investors and employees. Certain of the units are subject to rights of first refusal held by Antero Resources LLC and the other members. In addition, if, after complying with the applicable rights of first refusal, any member seeks to sell any units, the terms of such sale must include, from the third-party buyer, an offer to purchase, on the same terms, a proportional number of units of the same class of units to be sold by such selling member from each member that holds units of the class that the selling member is proposing to sell. Furthermore, if holders of at least 69% of certain classes of units and the director designated by Warburg Pincus approve a sale of Antero Resources LLC, then all members will be required both to approve the sale and to agree to sell all of their units on the terms and conditions of such approved sale.

Concurrent with the closing of the November 2009 corporate reorganization, Antero Resources LLC issued profits interests to Antero Resources Employee Holdings LLC, a Delaware limited liability company, owned solely by certain of our officers and employees. These profits interests only participate in distributions upon liquidation events meeting certain requisite financial return thresholds. In turn, Antero Resources Employee Holdings LLC issued similar profits interests to certain of our officers and employees.

### Registration Rights Agreement

In connection with the closing of this offering, we expect to enter into a registration rights agreement with Antero Investment. The registration rights agreement is expected to provide for customary rights for Antero Investment to demand that we file a resale shelf registration statement or, in certain circumstances, conduct an underwritten offering of shares held by Antero Investment. In addition, we expect that the agreement will grant Antero Investment customary rights to participate in certain underwritten offerings of our common stock that we may conduct.

### Antero Midstream

As described in "Corporate Reorganization," we intend to enter into a contribution agreement with Antero Midstream, pursuant to which we will contribute our midstream business to Antero Midstream, a newly formed limited liability company, in connection with the completion of this offering. We will own 100% of the economic interests and initially control Antero Midstream, but Antero Investment, which includes members of our management and our Sponsors, will own a special membership interest in Antero Midstream.

In connection with the contribution of our midstream business to Antero Midstream, we expect to enter into operational agreements with Antero Midstream to govern the business relationship between us and Antero Midstream. While these agreements will not be negotiated on an arms' length basis as a result of our existing relationship, we expect that the terms set forth therein will be comparable to agreements that had been negotiated on an arms' length basis between unrelated parties.

### ***Special Membership Interest***

Following the completion of this offering, Antero Investment will own a special membership interest in Antero Midstream through its wholly owned subsidiary, Antero Resources Midstream Management LLC, or Midstream Management. This special membership interest will not have any management or economic rights other than giving Antero Investment the right to cause an initial public offering of Antero Midstream through a master limited partnership or similar structure. The decision whether to cause an initial public offering of Antero Midstream will be in the sole discretion of the board of directors of Antero Investment, which will consist of affiliates of the Sponsors as well as members of our management. Following the completion of an initial public offering of Antero Midstream, the special membership interest will automatically convert into a non-economic general partner interest and incentive distribution rights in the newly converted master limited partnership described below. At such time, Antero Midstream will be controlled by Antero Investment. See "—Capitalization of Potential Midstream MLP."

Prior to any initial public offering of Antero Midstream, we are restricted from selling, transferring or otherwise disposing of any interest in Antero Midstream or any midstream assets without the prior written consent of Antero Investment. In addition, Antero Midstream will not be permitted to amend or modify any agreement with us without the consent of Antero Investment.

### ***Capitalization of Potential Midstream MLP***

In connection with an initial public offering of Antero Midstream, Antero Investment will have the right to cause Antero Midstream to convert into a master limited partnership. Typically, a master limited partnership distributes to its unitholders all available cash it generates each quarter, which generally equals cash flow from operations for the quarter, less cash needed for maintenance capital expenditures, debt service and other contractual obligations, and reserves for future operating or capital needs that the board of directors of the general partner deems necessary or appropriate. A master limited partnership typically adopts a cash distribution policy that requires it to distribute per unit a specified amount or greater, subject to the sufficiency of its available cash. This specified amount is referred to as the "minimum quarterly distribution."

A master limited partnership's capital structure typically consists of common units, subordinated units, a general partner interest and incentive distributions rights. Common units and subordinated units represent limited partner interests in the master limited partnership and have limited voting and control rights. The principal difference between common and subordinated units is that in any quarter during the subordination period, holders of the subordinated units are not entitled to receive any distributions until the common units have received the minimum quarterly distribution plus any arrearages in the payment of the minimum quarterly distribution from prior quarters. Subordinated units generally do not accrue arrearages.

A non-economic general partner interest allows a general partner to manage the master limited partnership's business and affairs, but does not entitle it to receive cash distributions on its general partner interest. Incentive distribution rights represent the right to receive an increasing percentage of quarterly distributions of available cash in excess of the minimum quarterly distribution when certain target distribution levels have been achieved. These target distribution levels are typically set at 115%, 125% and 150% of the minimum quarterly distribution. Following the completion of an initial public offering of Antero Midstream, the special membership interest held by Antero Investment will automatically convert into a non-economic general partner interest and incentive distribution rights in the newly converted master limited partnership. At such time, Antero Midstream will be controlled by Antero Investment.

The limited liability company agreement of Antero Midstream provides that upon any conversion of Antero Midstream into a limited partnership in connection with an initial public offering, the limited

partnership agreement and capital structure of the master limited partnership will be on terms customary for similar master limited partnerships, including the following:

- common units representing 50% of the limited partner interests in the master limited partnership and subordinated units representing 50% of the limited partner interests in the master limited partnership, all of which will initially be owned by us;
- a customary subordination period;
- a non-economic general partner interest in the master limited partnership, which will be owned by Antero Investment;
- a minimum quarterly distribution to be set based on a customary coverage ratio for master limited partnerships in the same line of business as Antero Midstream; and
- incentive distribution rights, which will be owned by Antero Investment, with customary splits for cash distributions:

	Marginal Percentage Interest in Distributions	
	Unitholders	Incentive Distribution Rights
Minimum Quarterly Distribution	100.0%	—
First Target Distribution	100.0%	—
Second Target Distribution	85.0%	15.0%
Third Target Distribution	75.0%	25.0%
Thereafter	50.0%	50.0%

### ***Gas Processing and Fractionation Agreement***

In connection with the closing of this offering, we intend to enter into a 20-year gas processing and fractionation agreement with Antero Midstream. Pursuant to the gas processing and fractionation agreement, we will dedicate all of our current and future natural gas production in West Virginia, Ohio and Pennsylvania to Antero Midstream for processing and fractionation, so long as such production is not otherwise subject to a pre-existing dedication. Antero Midstream will receive volumetric fees for the natural gas processing and NGL transportation, fractionation and marketing, subject to price adjustments based on the consumer price index, or CPI. Under the gas processing and fractionation agreement, we are obligated to deliver minimum daily volumes or pay fees for any deficiencies in deliveries. If we engage in production from any area outside of West Virginia, Ohio and Pennsylvania, Antero Midstream will have the option to process and fractionate such production on the same terms and conditions. In the event that Antero Midstream does not exercise this option, we will obtain proposals from third parties to process such production, subject to Antero Midstream's right to match the proposed terms.

In return for this dedication, Antero Midstream will agree to process the natural gas we produce in West Virginia, Ohio and Pennsylvania up to certain predetermined levels, redeliver the residue natural gas allocated to us, fractionate the NGLs allocated to our natural gas and market such fractionated NGLs on our behalf. Antero Midstream may perform all services under the gas processing and fractionation agreement or it may perform such services through third parties. In the event that Antero Midstream does not perform its obligations under the gas processing and fractionation agreement, we will be entitled to certain rights and remedies thereunder.

Pursuant to the gas processing and fractionation agreement, Antero Midstream will also agree to construct or cause to be constructed one or more processing plants to process the dedicated natural gas. If we require additional capacity in the future, Antero Midstream will have the option to provide such additional capacity on the same terms and conditions. In the event that Antero Midstream does



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not exercise this option, we will obtain proposals from third parties to process such production, subject to Antero Midstream's right to match the proposed terms.

***Gas Gathering and Compression Agreement***

In connection with the closing of this offering, we intend to enter into a 20-year gas gathering and compression agreement with Antero Midstream. Pursuant to the gas gathering and compression agreement, we will dedicate to Antero Midstream all of our current and future natural gas production in West Virginia, Ohio and Pennsylvania, so long as such production is not otherwise subject to a pre-existing dedication to third-party low- and high-pressure gathering systems. Antero Midstream will receive volumetric fees for low-pressure gathering, high-pressure gathering and compression subject to price adjustments based on the CPI. Under the gas gathering and compression agreement, we are obligated to deliver minimum daily volumes or pay fees for any deficiencies in deliveries.

If we produce natural gas outside of West Virginia, Ohio and Pennsylvania, Antero Midstream will have the option to gather and compress such natural gas on the same terms and conditions. In the event that Antero Midstream does not exercise this option, we will obtain proposals from third parties to gather such production, subject to Antero Midstream's right to match the proposed terms. Production subject to a pre-existing dedication will be dedicated to Antero Midstream at the expiration of such pre-existing dedication.

In return for this dedication, Antero Midstream will agree to gather, compress, dehydrate and redeliver all of our dedicated natural gas on a firm commitment, first-priority basis. Antero Midstream may perform all services under the gas gathering and compression agreement or it may perform such services through third parties. In the event that Antero Midstream does not perform its obligations under the gas gathering and compression agreement, we will be entitled to certain rights and remedies thereunder.

Pursuant to the gas gathering and compression agreement, Antero Midstream will also agree to build and connect all wells producing dedicated natural gas, subject to certain exceptions, upon 180 days' notice by us. In the event of late connections, our natural gas will temporarily not be subject to the dedication. Antero Midstream will be entitled to compensation under the gas gathering and compression agreement for capital costs incurred if a well does not commence production within a stated period of time following completion of the connection.

Antero Midstream will agree to install compression facilities at our direction, but will not be responsible for inlet pressures or for pressuring natural gas to enter downstream facilities if we have not directed Antero Midstream to install sufficient compression. Additionally, Antero Midstream will provide high-pressure gathering pursuant to the gas gathering and compression agreement.

***Water Services Agreement***

In connection with the closing of this offering, we intend to enter into a 20-year water services agreement with Antero Midstream that will cover all of our areas of operation in West Virginia, Ohio and Pennsylvania. Antero Midstream will receive per-barrel fees for fresh water deliveries to well sites or a reduced per-barrel fee if we transport the water from Antero Midstream's storage facilities. Under the water services agreement, we are obligated to deliver minimum daily volumes or pay fees for any deficiencies in deliveries.

If we require water services outside of our areas of operation in West Virginia, Ohio and Pennsylvania, Antero Midstream will have the option to provide water services to such areas on the same terms and conditions. In the event Antero Midstream does not exercise this option, we will obtain proposals from third parties to provide such services, subject to Antero Midstream's right to match the proposed terms.

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The water pipeline system by which Antero Midstream will provide water services will include facilities for receiving fresh water at designated sources. Pursuant to the agreement, Antero Midstream will transport and store such fresh water at specific areas of operation. Further, the water pipeline system will include water lines for delivering our fresh water from the transportation system to our well sites for hydraulic fracturing operations.

In return for this dedication, Antero Midstream will agree to receive our fresh water and deliver such fresh water to the water pipeline system storage facilities or to particular well sites for hydraulic fracturing up to the available capacity of the water pipeline system. We will retain the risk of acquiring water in sufficient quantities. Antero Midstream may perform all services under the water services agreement or it may perform such services through third parties. In the event that Antero Midstream does not perform its obligations under the water services agreement, we will be entitled to certain rights and remedies thereunder.

Pursuant to the water services agreement, if we require additional water transportation or storage capacity in excess of current availability, Antero Midstream will have the option to construct such expanded facilities on the same terms and conditions. In the event that Antero Midstream does not exercise this option, we will obtain proposals from third parties to expand the water pipeline system, subject to Antero Midstream's right to match the proposed terms. Antero Midstream will have the right to use excess water pipeline system capacity and water from our fresh water sources to provide to third parties, provided that Antero Midstream pays the cost, if any, of such excess water.

Further, Antero Midstream will be required to build out and expand the water pipeline system in order to deliver fresh water to all of our wells being drilled, subject to certain exceptions, upon 180 days' notice by us. If Antero Midstream does not connect to a particular well for water deliveries, we may transport water from Antero Midstream's water storage sites for delivery to our well sites.

### ***Credit Support Arrangements***

In connection with the closing of this offering, we intend to enter into credit support arrangements with our midstream business, which may include an intercompany credit facility or an agreement to guaranty third-party indebtedness.

### ***Services Agreement***

In connection with the closing of this offering, we intend to enter into a services agreement with Antero Midstream and its general partner that will provide for our provision of certain management and other services to Antero Midstream and its general partner. The general partner will engage us to conduct the day-to-day business operations of Antero Midstream. The services we will provide under the agreement will include customary management and general administrative services. We expect that we will be reimbursed for our direct expenses on behalf of Antero Midstream and a proportionate share of our indirect expenses, including compensation expense.

### ***Conflicts of Interests Policy for Transactions between Antero Midstream and Us***

Prior to the completion of this offering, we anticipate that our board of directors will adopt a Conflicts of Interests Policy, which is expected to be designed to monitor and ensure the proper review, approval, ratification and disclosure of transactions between Antero Midstream and us. The policy will apply following an initial public offering of Antero Midstream to any transaction, arrangement or relationship (or any series of similar transactions, arrangements or relationships) between us or any of our subsidiaries, on the one hand, and Antero Midstream, its general partner or any of its subsidiaries, on the other hand. We expect that, pursuant to the policy, all such transactions will be required to be fair and reasonable to us.

### ***Firm Transportation Agreement***

We are party to a firm transportation agreement with a private midstream company controlled by certain investment funds managed by Yorktown Partners LLC, one of our Sponsors. In addition, Mr. Keenan serves on both our board and the board of the private midstream company. Our obligations under the agreement are approximately \$3.0 million per year through September 2022.

### ***Agreements with Crosstex***

A principal of Yorktown Partners LLC, one of our Sponsors, serves as a director of Crosstex Energy GP, LLC, the general partner of Crosstex Energy, L.P., or Crosstex. We have entered into a compression and condensate stabilization agreement with an affiliate of Crosstex for a period of seven years. The minimum annual fee under this agreement is \$8.7 million. In addition, we are party to a compression operating agreement with an affiliate of Crosstex, pursuant to which they have agreed to operate one of our compression stations for a twelve-month period that began on May 1, 2013. The minimum monthly fee under this agreement is \$30,000.

### **Procedures for Approval of Related Party Transactions**

Prior to the closing of this offering, we have not maintained a policy for approval of Related Party Transactions. A "Related Party Transaction" is a transaction, arrangement or relationship in which we or any of our subsidiaries was, is or will be a participant, the amount of which involved exceeds \$120,000, and in which any Related Person had, has or will have a direct or indirect material interest. A "Related Person" means:

- any person who is, or at any time during the applicable period was, one of our executive officers or one of our directors;
- any person who is known by us to be the beneficial owner of more than 5% of our common stock;
- any immediate family member of any of the foregoing persons, which means any child, stepchild, parent, stepparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law or sister-in-law of a director, executive officer or a beneficial owner of more than 5% of our common stock, and any person (other than a tenant or employee) sharing the household of such director, executive officer or beneficial owner of more than 5% of our common stock; and
- any firm, corporation or other entity in which any of the foregoing persons is a partner or principal or in a similar position or in which such person has a 10% or greater beneficial ownership interest.

In addition to the Conflicts of Interest Policy described under "—Antero Midstream—Conflicts of Interests Policy for Transactions between Antero Midstream and Us," we anticipate that our board of directors will adopt a written related party transactions policy prior to the completion of this offering. Pursuant to this policy, we expect that our audit committee will review all material facts of all Related Party Transactions.

## CORPORATE REORGANIZATION

Antero Resources Corporation is a Delaware corporation. Following the completion of a corporate reorganization that will occur immediately prior to or contemporaneously with the closing of this offering, Antero Resources LLC will merge into Antero Resources Corporation. Therefore, investors in this offering will only receive, and this prospectus only describes the offering of, shares of common stock of Antero Resources Corporation. See "Description of Capital Stock" for additional information regarding the terms of our amended and restated certificate of incorporation and amended and restated bylaws as will be in effect upon the closing of this offering.

The reorganization will consist of the following steps:

- the formation of Antero Resources Investment LLC, a Delaware limited liability company;
- the exchange of all outstanding membership interests of our existing owners in Antero Resources LLC into equivalent interests in Antero Investment;
- the merger of Antero Resources LLC into Antero Resources Corporation, as a result of which Antero Investment will receive shares of common stock in Antero Resources Corporation.

As a result of these steps, Antero Resources Corporation will become a direct subsidiary of Antero Investment.

In addition, we expect to contribute our midstream business to Antero Midstream, which will be a newly formed limited liability company that we will initially control and in which we will own 100% of the economic interests. Antero Investment, which is indirectly owned by members of our management and our Sponsors, will indirectly own a special membership interest in Antero Midstream through its ownership of Midstream Management. This special membership interest will not have any management or economic rights other than giving Antero Investment certain rights related to an initial public offering of Antero Midstream. See "Certain Relationships and Related Party Transactions—Antero Midstream."

We refer to the transactions above collectively as our "corporation reorganization."

### **Limited Liability Company Agreement of Antero Investment**

In connection with the completion of this offering, the members of Antero Investment, including the Sponsors, certain members of our management team and Employee Holdings will enter into a limited liability company agreement for Antero Investment, or the LLC Agreement. Among other things, the LLC Agreement will provide the mechanism by which Antero Investment will vote the shares of our common stock that it holds and the circumstances in which distributions will be made to the members of Antero Investment.

The LLC Agreement will provide that the board of directors of Antero Investment shall consist of:

- our chief executive officer;
- Glen Warren, for so long as he remains our chief financial officer;
- one director appointed by Warburg Pincus, for so long as it retains a minimum investment;
- one director appointed by Yorktown, for so long as it retains a minimum investment; and
- one director appointed by Trilantic, for so long as it retains a minimum investment.

In addition, the LLC agreement will provide that Antero Investment and its members will agree to vote the shares of our common stock held by Antero Investment in favor of the election of these five directors to our board.

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Under the LLC Agreement, the board of directors of Antero Investment has the authority to vote the shares of our common stock held in its discretion with respect to matters deemed ordinary course, including the election of our directors, the ratification of our auditor, the approval of incentive compensation plans and proposals submitted by other stockholders. On all other matters, the board of directors of Antero Investment will vote the shares of common stock in equal proportion to the vote cast by members holding voting units relative to all outstanding voting units. See "Principal and Selling Stockholders" for a description of the ownership of the voting interests of Antero Investment of each of our Sponsors.

The LLC Agreement will provide that Antero Investment will make distributions to its members in certain circumstances, including in connection with a change of control of us and any secondary sales of our common stock by Antero Investment. In addition, on a date to be determined in accordance with the LLC Agreement, Antero Investment will distribute all remaining shares of our common stock to its members based on a valuation at such time. The number of shares that members of our management team and Employee Holdings receive will increase as the return on investment ultimately realized by the other members of Antero Investment increases.

## PRINCIPAL AND SELLING STOCKHOLDERS

### Beneficial Ownership

The following table sets forth information with respect to the beneficial ownership of our common stock as of \_\_\_\_\_, 2013 after giving effect to our corporation reorganization by:

- each of our named executive officers;
- each of our directors;
- all of our directors and executive officers as a group; and
- the selling stockholder.

Except as otherwise noted, the person or entities listed below have sole voting and investment power with respect to all shares of our common stock beneficially owned by them, except to the extent this power may be shared with a spouse. All information with respect to beneficial ownership has been furnished by the respective directors, officers or 5% or more stockholders, as the case may be. Unless otherwise note, the mailing address of each person or entity named in the table is 1625 17th Street, Denver, Colorado, 80202.

The selling stockholder has granted the underwriters the option to purchase up to an additional \_\_\_\_\_ shares of common stock and will sell shares only to the extent such option is exercised. The number of shares being offered by the selling stockholder in the table below assumes a full exercise of the underwriters' option to purchase additional shares of common stock.

<u>Name and Address of Beneficial Owner</u>	<u>Shares Beneficially Owned Prior to the Offering(1)</u>		<u>Shares Being Offered</u>	<u>Shares Beneficially Owned After Offering</u>	
	<u>Number</u>	<u>Percentage</u>		<u>Number</u>	<u>Percentage</u>
Antero Resources Investment LLC(2)					
Peter R. Kagan					
W. Howard Keenan, Jr.					
Christopher R. Manning					
Paul M. Rady					
Glen C. Warren, Jr.					
Kevin J. Kilstrom					
Alvyn A. Schopp					
Directors and executive officers as a group (8 persons)					

\* Less than one percent.

- (1) Prior to the completion of our corporate reorganization (which will occur immediately prior to or contemporaneously with the completion of this offering), the ownership interests of the selling stockholder and our directors and named executive officers are represented by limited liability company interests in Antero Resources LLC.
- (2) Pursuant to the LLC Agreement, the disposition of any shares of our common stock held by Antero Investment requires the approval of the director appointed by Warburg Pincus and at least 69% of the voting interests in Antero Investment.

Under the LLC Agreement, the board of directors of Antero Investment has the authority to vote the shares of our common stock held by Antero Investment in its discretion with respect to matters deemed ordinary course, including the election of our directors, the ratification of our

auditor, the approval of incentive compensation plans and proposals submitted by other stockholders. On all other matters, the board of directors of Antero Investment will vote the shares of common stock in equal proportion to the vote cast by members holding voting units relative to all outstanding voting units.

See "Corporate Reorganization—Limited Liability Company Agreement of Antero Investment."

Funds affiliated with Warburg Pincus will own 38.4% of the voting interests in, and will have the right to appoint one director of, Antero Investment. The Warburg Pincus funds are Warburg Pincus Private Equity VIII, L.P., a Delaware limited partnership ("WP VIII"), and together with its two affiliated partnerships Warburg Pincus Netherlands Private Equity VIII C.V. I, a company formed under the laws of the Netherlands ("WP VIII CV I"), and WP-WPVIII Investors, L.P., a Delaware limited partnership ("WP-WPVIII Investors"), collectively, the WP VIII Funds), Warburg Pincus Private Equity X, L.P., a Delaware limited partnership ("WP X"), and Warburg Pincus X Partners, L.P., a Delaware limited partnership ("WP X Partners," and together with WP X, the "WP X Funds"), and Warburg Pincus Private Equity X O&G, L.P., a Delaware limited partnership ("WP X O&G"), through their beneficial interests in WP Antero LLC, a Delaware limited liability company, an indirect subsidiary of WP X, WP X O&G, WP-WPVIII Investors and a direct subsidiary of WP X Partners, WP VIII and WP VIII CV I. Warburg Pincus X, L.P., a Delaware limited partnership ("WP X GP"), is the general partner of the WP X Funds and WP X O&G. Warburg Pincus X LLC, a Delaware limited liability company ("WP X LLC"), is the general partner of WP X GP. WP-WPVIII Investors LLC, a Delaware limited liability company ("WP-WPVIII LLC"), is the general partner of WP-WPVIII Investors. Warburg Pincus Partners LLC, a New York limited liability company ("WP Partners"), is the sole member of WP X LLC and WP-WPVIII Investors LLC and the general partner of WP VIII and WP VIII CV I. Warburg Pincus & Co., a New York general partnership ("WP"), is the managing member of WP Partners. Warburg Pincus LLC, a New York limited liability company ("WP LLC"), is the manager of the WP VIII Funds, the WP X Funds, and WP X O&G. Charles R. Kaye and Joseph P. Landy are Managing General Partners of WP and Managing Members and Co-Presidents of WP LLC and may be deemed to control the Warburg Pincus entities. Warburg Pincus disclaims beneficial ownership of the shares of common stock, except to the extent of its pecuniary interest. Messrs. Kaye and Landy disclaim beneficial ownership of all shares held by the Warburg Pincus entities.

Investment funds managed by Yorktown Partners will own 10.8% of the voting interests in, and will have the right to appoint one director of, Antero Investment. The Yorktown funds that will hold an interest in Antero Investment consist of Yorktown Energy Partners V, L.P., Yorktown Energy Partners, VI, L.P., Yorktown Energy Partners VII, L.P. and Yorktown Energy Partners VIII, L.P. Yorktown V Company LLC is the sole general partner of Yorktown Energy Partners V, L.P. Yorktown VI Company LP is the sole general partner of Yorktown Energy Partners VI, L.P. Yorktown VI Associates LLC is the sole general partner of Yorktown VI Company LP. Yorktown VII Company LP is the sole general partner of Yorktown Energy Partners VII, L.P. Yorktown VII Associates LLC is the sole general partner of Yorktown VII Company LP. The managers of each of Yorktown V Company LLC, Yorktown VI Associates LLC and Yorktown VII Associates LLC, who act by majority approval, are Bryan H. Lawrence, W. Howard Keenan, Jr., Peter A. Leidel, Tomás R. LaCosta and Robert A. Signorino. As a result, Yorktown V Company LLC, Yorktown VI Associates LLC, Yorktown VII Associates LLC and their respective managers may be deemed to share the power to vote or direct the vote or dispose or direct the disposition of the voting interests in Antero Investment owned by the Yorktown funds. Such Yorktown funds disclaim beneficial ownership of the shares of common stock held by Antero Investment, except to the extent of their pecuniary interest therein. Yorktown V Company LLC, Yorktown VI

Associates LLC, Yorktown VII Associates LLC and their respective managers disclaim beneficial ownership of all shares of common stock held by Antero Investment.

Trilantic Capital Partners Fund III Onshore Rollover L.P., Trilantic Capital Partners AIV I L.P., Trilantic Capital Partners Fund AIV I L.P., Trilantic Capital Partners Fund (B) AIV I L.P., TCP Capital Partners V AIV I L.P., Trilantic Capital Partners IV L.P., Trilantic Capital Partners Group VI L.P., Trilantic Capital Partners Fund IV Funded Rollover L.P., TCP Capital Partners VI L.P. (collectively, "Trilantic Capital Partners") and LB DPEF 2004 Partners L.P. ("DPEF") will collectively and indirectly own 8.5% of the voting interests in Antero Investment. The holdings of Trilantic Capital Partners and DPEF are held by TCP Antero I-1 Holdco, LLC, which is managed by Trilantic Capital Management LLC ("TCM") as managing member; TCP Antero I-2 Holdco, LLC and TCP Antero I-4 Holdco, LLC, are each managed by Trilantic Capital Partners IV L.P. as managing member. TCP Antero I-1 Holdco, LLC, TCP Antero I-2 Holdco, LLC and TCP Antero I-4 Holdco, LLC (collectively, the "Trilantic Entities") will have the right to appoint one director of Antero Investment. TCM, the investment adviser of Trilantic Capital Partners, as well as Charles Ayres, E. Daniel James, Christopher R. Manning, Jon Mattson and Charles C. Moore (collectively, the "Trilantic Partners") as partners, members of the Board of Managers and majority owners of TCM, may be deemed to share voting and dispositive power of the voting interests in Antero Investment owned by Trilantic Capital Partners. Trilantic Capital Partners and DPEF disclaim beneficial ownership of the shares of common stock, except to the extent of their pecuniary interest. TCM and the Trilantic Partners disclaim beneficial ownership of all shares held by the Trilantic Entities.



## DESCRIPTION OF CAPITAL STOCK

Upon completion of this offering, the authorized capital stock of Antero Resources Corporation will consist of \_\_\_\_\_ shares of common stock, \$ \_\_\_\_\_ par value per share, of which \_\_\_\_\_ shares will be issued and outstanding, and \_\_\_\_\_ shares of preferred stock, \$ \_\_\_\_\_ par value per share, of which no shares will be issued and outstanding.

The following summary of the capital stock and amended and restated certificate of incorporation and amended and restated bylaws of Antero Resources Corporation does not purport to be complete and is qualified in its entirety by reference to the provisions of applicable law and to our amended and restated certificate of incorporation and amended and restated bylaws, which are filed as exhibits to the registration statement of which this prospectus is a part.

### Common Stock

Except as provided by law or in a preferred stock designation, holders of common stock are entitled to one vote for each share held of record on all matters submitted to a vote of the stockholders, will have the exclusive right to vote for the election of directors and do not have cumulative voting rights. Except as otherwise required by law, holders of common stock, are not entitled to vote on any amendment to the amended and restated certificate of incorporation (including any certificate of designations relating to any series of preferred stock) that relates solely to the terms of any outstanding series of preferred stock if the holders of such affected series are entitled, either separately or together with the holders of one or more other such series, to vote thereon pursuant to the amended and restated certificate of incorporation (including any certificate of designations relating to any series of preferred stock) or pursuant to the DGCL. Subject to prior rights and preferences that may be applicable to any outstanding shares or series of preferred stock, holders of common stock are entitled to receive ratably in proportion to the shares of common stock held by them such dividends (payable in cash, stock or otherwise), if any, as may be declared from time to time by our board of directors out of funds legally available for dividend payments. All outstanding shares of common stock are fully paid and non-assessable, and the shares of common stock to be issued upon completion of this offering will be fully paid and non-assessable. The holders of common stock have no preferences or rights of conversion, exchange, pre-emption or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. In the event of any voluntary or involuntary liquidation, dissolution or winding-up of our affairs, holders of common stock will be entitled to share ratably in our assets in proportion to the shares of common stock held by them that are remaining after payment or provision for payment of all of our debts and obligations and after distribution in full of preferential amounts to be distributed to holders of outstanding shares of preferred stock, if any.

### Preferred Stock

Our amended and restated certificate of incorporation authorizes our board of directors, subject to any limitations prescribed by law, without further stockholder approval, to establish and to issue from time to time one or more classes or series of preferred stock, par value \$ \_\_\_\_\_ per share, covering up to an aggregate of \_\_\_\_\_ shares of preferred stock. Each class or series of preferred stock will cover the number of shares and will have the powers, preferences, rights, qualifications, limitations and restrictions determined by the board of directors, which may include, among others, dividend rights, liquidation preferences, voting rights, conversion rights, preemptive rights and redemption rights. Except as provided by law or in a preferred stock designation, the holders of preferred stock will not be entitled to vote at or receive notice of any meeting of stockholders.

## **Anti-Takeover Effects of Provisions of Our Amended and Restated Certificate of Incorporation, our Amended and Restated Bylaws and Delaware Law**

Some provisions of Delaware law, our amended and restated certificate of incorporation and our amended and restated bylaws will contain provisions that could make the following transactions more difficult: acquisitions of us by means of a tender offer, a proxy contest or otherwise; or removal of our incumbent officers and directors. These provisions may also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish or could deter transactions that stockholders may otherwise consider to be in their best interest or in our best interests, including transactions that might result in a premium over the market price for our shares.

These provisions are expected to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with us. We believe that the benefits of increased protection and our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us outweigh the disadvantages of discouraging these proposals because, among other things, negotiation of these proposals could result in an improvement of their terms.

### ***Delaware Law***

Section 203 of the DGCL prohibits a Delaware corporation, including those whose securities are listed for trading on the NYSE, from engaging in any business combination with any interested stockholder for a period of three years following the date that the stockholder became an interested stockholder, unless:

- the transaction is approved by the board of directors before the date the interested stockholder attained that status;
- upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced; or
- on or after such time the business combination is approved by the board of directors and authorized at a meeting of stockholders by at least two-thirds of the outstanding voting stock that is not owned by the interested stockholder.

We may elect to not be subject to the provisions of Section 203 of the DGCL.

### ***Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws***

Provisions of our amended and restated certificate of incorporation and amended and restated bylaws, which will become effective upon the closing of this offering, may delay or discourage transactions involving an actual or potential change in control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares, or transactions that our stockholders might otherwise deem to be in their best interests. Therefore, these provisions could adversely affect the price of our common stock.

### **Limitation of Liability and Indemnification Matters**

Our amended and restated certificate of incorporation limits the liability of our directors for monetary damages for breach of their fiduciary duty as directors, except for liability that cannot be eliminated under the DGCL. Delaware law provides that directors of a company will not be personally liable for monetary damages for breach of their fiduciary duty as directors, except for liabilities:

- for any breach of their duty of loyalty to us or our stockholders;

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- for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;
- for unlawful payment of dividend or unlawful stock repurchase or redemption, as provided under Section 174 of the DGCL; or
- for any transaction from which the director derived an improper personal benefit.

Any amendment, repeal or modification of these provisions will be prospective only and would not affect any limitation on liability of a director for acts or omissions that occurred prior to any such amendment, repeal or modification.

Our amended and restated certificate of incorporation and amended and restated bylaws also provide that we will indemnify our directors and officers to the fullest extent permitted by Delaware law. Our amended and restated certificate of incorporation and amended and restated bylaws also permit us to purchase insurance on behalf of any officer, director, employee or other agent for any liability arising out of that person's actions as our officer, director, employee or agent, regardless of whether Delaware law would permit indemnification. We intend to enter into indemnification agreements with each of our current and future directors and officers. These agreements will require us to indemnify these individuals to the fullest extent permitted under Delaware law against liability that may arise by reason of their service to us, and to advance expenses incurred as a result of any proceeding against them as to which they could be indemnified. We believe that the limitation of liability provision in our amended and restated certificate of incorporation and the indemnification agreements will facilitate our ability to continue to attract and retain qualified individuals to serve as directors and officers.

### **Transfer Agent and Registrar**

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

### **Listing**

We have applied to list our common stock on the NYSE under the symbol "AR".

## SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for our common stock. Future sales of our common stock in the public market, or the availability of such shares for sale in the public market, could adversely affect the market price of our common stock prevailing from time to time. As described below, only a limited number of shares will be available for sale shortly after this offering due to contractual and legal restrictions on resale. Nevertheless, sales of a substantial number of shares of our common stock in the public market after such restrictions lapse, or the perception that those sales may occur, could adversely affect the prevailing market price of our common stock at such time and our ability to raise equity-related capital at a time and price we deem appropriate.

### Sales of Restricted Shares

Upon the closing of this offering, we will have outstanding an aggregate of \_\_\_\_\_ shares of common stock. Of these shares, all of the \_\_\_\_\_ shares of common stock to be sold in this offering will be freely tradable without restriction or further registration under the Securities Act, unless the shares are held by any of our "affiliates" as such term is defined in Rule 144 under the Securities Act. All remaining shares of common stock held by existing stockholders will be deemed "restricted securities" as such term is defined under Rule 144. The restricted securities were issued and sold by us in private transactions and are eligible for public sale only if registered under the Securities Act or if they qualify for an exemption from registration under Rule 144 or Rule 701 under the Securities Act, which rules are summarized below.

As a result of the lock-up agreements described below and the provisions of Rule 144 and Rule 701 under the Securities Act, the shares of our common stock (excluding the shares to be sold in this offering) that will be available for sale in the public market are as follows:

- no shares will be eligible for sale on the date of this prospectus or prior to 180 days after the date of this prospectus;
- shares will be eligible for sale upon the expiration of the lock-up agreements, beginning 180 days after the date of this prospectus (subject to extension) and when permitted under Rule 144 or Rule 701; and
- shares will be eligible for sale, upon exercise of vested options, upon the expiration of the lock-up agreements, beginning 180 days after the date of this prospectus (subject to extension).

### Lock-up Agreements

We, all of our directors and officers and Antero Investment have agreed not to sell any common stock for a period of 180 days from the date of this prospectus, subject to certain exceptions and extensions. See "Underwriting (Conflicts of Interest)" for a description of these lock-up provisions.

### Rule 144

In general, under Rule 144 under the Securities Act as currently in effect, a person (or persons whose shares are aggregated) who is not deemed to have been an affiliate of ours at any time during the three months preceding a sale, and who has beneficially owned restricted securities within the meaning of Rule 144 for a least sixth months (including any period of consecutive ownership of preceding non-affiliated holders) would be entitled to sell those shares, subject only to the availability of current public information about us. A non-affiliated person who has beneficially owned restricted securities within the meaning of Rule 144 for at least one year would be entitled to sell those shares without regard to the provisions of Rule 144.

A person (or persons whose shares are aggregated) who is deemed to be an affiliate of ours and who has beneficially owned restricted securities within the meaning of Rule 144 for at least nine months would be entitled to sell within any three-month period a number of shares that does not exceed the greater of one percent of the then outstanding shares of our common stock or the average weekly trading volume of our common stock reported through the NYSE during the four calendar weeks preceding the filing of notice of the sale. Such sales are also subject to certain manner of sale provisions, notice requirements and the availability of current public information about us.

#### **Rule 701**

In general, under Rule 701 under the Securities Act, any of our employees, directors, officers, consultants or advisors who purchases shares from us in connection with a compensatory stock or option plan or other written agreement before the effective date of this offering is entitled to sell such shares 90 days after the effective date of this offering in reliance on Rule 144, without having to comply with the holding period requirement of Rule 144 and, in the case of non-affiliates, without having to comply with the public information, volume limitation or notice filing provisions of Rule 144. The SEC has indicated that Rule 701 will apply to typical stock options granted by an issuer before it becomes subject to the reporting requirements of the Exchange Act, along with the shares acquired upon exercise of such options, including exercises after the date of this prospectus.

#### **Stock Issued Under Employee Plans**

We intend to file a registration statement on Form S-8 under the Securities Act to register stock issuable under our LTIP. This registration statement on Form S-8 is expected to be filed following the effective date of the registration statement of which this prospectus is a part and will be effective upon filing. Accordingly, shares registered under such registration statement will be available for sale in the open market following the effective date, unless such shares are subject to vesting restrictions with us, Rule 144 restrictions applicable to our affiliates or the lock-up restrictions described above.

**MATERIAL U.S. FEDERAL INCOME AND ESTATE TAX CONSIDERATIONS  
FOR NON-U.S. HOLDERS**

The following is a summary of the material U.S. federal income tax and, to a limited extent, estate tax, consequences related to the purchase, ownership and disposition of our common stock by a non-U.S. holder (as defined below), that holds our common stock as a "capital asset" (generally property held for investment). This summary is based on the provisions of the Internal Revenue Code of 1986, as amended, or the Code, U.S. Treasury regulations and administrative rulings and judicial decisions, all as in effect on the date hereof, and all of which are subject to change, possibly with retroactive effect. We have not sought any ruling from the Internal Revenue Service, or the IRS, with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS will agree with such statements and conclusions.

This summary does not address all aspects of U.S. federal income and estate taxation or the tax considerations arising under the laws of any non-U.S., state, or local jurisdiction, or under U.S. federal gift tax laws. In addition, this summary does not address tax considerations applicable to investors that may be subject to special treatment under the U.S. federal income tax laws, such as (without limitation):

- banks, insurance companies or other financial institutions;
- tax-exempt or governmental organizations;
- dealers in securities or foreign currencies;
- traders in securities that use the mark-to-market method of accounting for U.S. federal income tax purposes;
- "controlled foreign corporations," "passive foreign investment companies" and corporations that accumulate earnings to avoid U.S. federal income tax;
- persons subject to the alternative minimum tax;
- partnerships or other pass-through entities for U.S. federal income tax purposes or holders of interests therein;
- persons that hold our common stock as a result of a constructive sale;
- persons that acquired our common stock through the exercise of employee stock options or otherwise as compensation or through a tax-qualified retirement plan;
- certain former citizens or long-term residents of the United States;
- real estate investment trusts or regulated investment companies;
- persons that hold our common stock as part of a straddle, appreciated financial position, synthetic security, hedge, conversion transaction or other integrated investment or risk reduction transaction; and
- persons that hold in excess of 5% of our common stock.

**YOU ARE ENCOURAGED TO CONSULT YOUR TAX ADVISOR WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME AND ESTATE TAX LAWS TO YOUR PARTICULAR SITUATION, AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK ARISING UNDER THE U.S. FEDERAL GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL, NON-U.S. OR OTHER TAXING JURISDICTION OR UNDER ANY APPLICABLE TAX TREATY.**

## **Non-U.S. Holder Defined**

For purposes of this discussion, a non-U.S. holder is a beneficial owner of our common stock that is an individual, corporation, estate or trust and is not for U.S. federal income tax purposes any of the following:

- an individual citizen or resident of the United States, including an alien individual who is a lawful permanent resident of the United States or who meets the "substantial presence" test under Section 7701(b) of the Code;
- a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state thereof or the District of Columbia;
- an estate the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust (i) whose administration is subject to the primary supervision of a U.S. court and which has one or more United States persons who have the authority to control all substantial decisions of the trust or (ii) which has made a valid election under applicable U.S. Treasury regulations to be treated as a United States person.

If a partnership (or an entity treated as a partnership for U.S. federal income tax purposes) holds our common stock, the tax treatment of a partner in the partnership generally will depend upon the status of the partner and upon the activities of the partnership. Accordingly, we urge partners of a partnership (including an entity treated as a partnership for U.S. federal income tax purposes) investing in our common stock to consult their tax advisors regarding the U.S. federal income tax considerations of the purchase, ownership and disposition of our common stock by such partnership.

## **Distributions**

We do not plan to make any distributions on our common stock for the foreseeable future. However, if we do make distributions on our common stock, those payments will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent those distributions exceed our current and accumulated earnings and profits, the distributions will be treated as a non-taxable return of capital to the extent of the non-U.S. holder's tax basis in our common stock and thereafter as capital gain from the sale or exchange of such common stock. See "—Gain on Disposition of Common Stock." Any dividend paid to a non-U.S. holder on our common stock generally will be subject to U.S. withholding tax at a rate of 30% of the gross amount of the dividend or such lower rate as may be specified by an applicable tax treaty. To receive the benefit of a reduced treaty rate, a non-U.S. holder must provide the withholding agent with an IRS Form W-8BEN (or other appropriate form) certifying qualification for the reduced rate.

Dividends paid to a non-U.S. holder that are effectively connected with a trade or business conducted by the non-U.S. holder in the United States (and, if required by an applicable tax treaty, are attributable to a permanent establishment maintained by the non-U.S. holder in the United States) generally will be taxed on a net income basis at the rates and in the manner generally applicable to U.S. persons (as defined under the Code). Effectively connected dividend income will not be subject to U.S. withholding tax if the non-U.S. holder satisfies certain certification requirements by providing to the withholding agent a properly executed IRS Form W-8ECI (or successor form) certifying eligibility for the exemption. If the non-U.S. holder is a corporation, that portion of the corporation's earnings and profits for the taxable year, as adjusted for certain items, that is effectively connected with its U.S. trade or business may also be subject to a "branch profits tax" at a 30% rate or such lower rate as may be specified by an applicable tax treaty.

## **Gain on Disposition of Common Stock**

A non-U.S. holder generally will not be subject to U.S. federal income tax on any gain realized upon the sale or other disposition of our common stock unless:

- the non-U.S. holder is an individual who is present in the United States for a period or periods aggregating 183 days or more during the calendar year in which the sale or disposition occurs and certain other conditions are met;
- the gain is effectively connected with a trade or business conducted by the non-U.S. holder in the United States (and, if required by an applicable tax treaty, is attributable to a permanent establishment maintained by the non-U.S. holder in the United States); or
- our common stock constitutes a U.S. real property interest by reason of our status as a United States real property holding corporation, or USRPHC, for U.S. federal income tax purposes.

A non-U.S. holder described in the first bullet point above will be subject to tax at a rate of 30% (or such lower rate as may be specified by an applicable tax treaty) on the amount of such gain (which may be offset by U.S. source capital losses).

A non-U.S. holder whose gain is described in the second bullet point above will be subject to U.S. federal income tax on any gain recognized on a net income basis at the same graduated rates generally applicable to U.S. persons unless an applicable tax treaty provides otherwise. Corporate non-U.S. holders may also be subject to a branch profits tax equal to 30% (or such lower rate as may be specified by an applicable tax treaty) of their earnings and profits that are effectively connected with a U.S. trade or business and attributable to such gain, as adjusted for certain items.

Generally, a corporation is a USRPHC if the fair market value of its U.S. real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests and its other assets used or held for use in a trade or business. We believe that we currently are, and expect to remain for the foreseeable future, a USRPHC for U.S. federal income tax purposes. However, as long as our common stock is "regularly traded on an established securities market," a non-U.S. holder will be taxable on gain recognized on the disposition of our common stock as a result of our status as a USRPHC only if the non-U.S. holder actually or constructively owns owned at any time during the shorter of the five-year period ending on the date of the disposition or, if shorter, the non-U.S. holder's holding period for the common stock, more than 5% of our common stock. If our common stock were not considered to be regularly traded on an established securities market, all non-U.S. holders would be subject to U.S. federal income tax on a disposition of our common stock, and a 10% withholding tax would apply to the gross proceeds from the sale of our common stock by such non-U.S. holder.

Non-U.S. holders should consult their tax advisors with respect to the application of the foregoing rules to their ownership and disposition of our common stock.

## **U.S. Federal Estate Tax**

Our common stock beneficially owned or treated as owned by an individual who is not a citizen or resident of the United States (as defined for U.S. federal estate tax purposes) at the time of death generally will be includable in the decedent's gross estate for U.S. federal estate tax purposes, unless an applicable estate tax treaty provides otherwise, and therefore may be subject to U.S. federal estate tax.

## **Backup Withholding and Information Reporting**

Generally, we must report annually to the IRS and to each non-U.S. holder the amount of dividends paid to such holder, the name and address of the recipient, and the amount, if any, of tax withheld with respect to those dividends. These information reporting requirements apply even if



withholding was not required. Pursuant to tax treaties or other agreements, the IRS may make such reports available to tax authorities in the recipient's country of residence.

Payments of dividends to a non-U.S. holder generally will not be subject to backup withholding if the non-U.S. holder establishes an exemption by properly certifying its non-U.S. status on an IRS Form W-8BEN or another appropriate version of IRS Form W-8, provided that the withholding agent does not have actual knowledge, or reason to know, that the beneficial owner is a U.S. person that is not an exempt recipient.

Payments of the proceeds from a sale or other disposition by a non-U.S. holder of our common stock effected by or through a U.S. office of a broker generally will be subject to information reporting and backup withholding (at the applicable rate) unless the non-U.S. holder establishes an exemption by properly certifying its non-U.S. status on an IRS Form W-8BEN or another appropriate version of IRS Form W-8 and certain other conditions are met or the non-U.S. holder otherwise establishes an exemption. Information reporting and backup withholding generally will not apply to any payment of the proceeds from a sale or other disposition of our common stock effected outside the United States by a foreign office of a broker. However, unless such broker has documentary evidence in its records that the holder is a non-U.S. holder and certain other conditions are met, or the non-U.S. holder otherwise establishes an exemption, information reporting will apply to a payment of the proceeds of the disposition of our common stock effected outside the United States by such a broker if it has certain relationships within the United States.

Backup withholding is not an additional tax. Rather, the U.S. income tax liability (if any) of persons subject to backup withholding will be reduced by the amount of tax withheld. If withholding results in an overpayment of taxes, a refund may be obtained, provided that certain required information is timely furnished to the IRS.

### **Legislation Affecting Common Stock Held Through Foreign Accounts**

Legislation enacted in 2010 imposes a 30% withholding tax on any dividends on our common stock and on the gross proceeds from a disposition of our common stock in each case if paid to a foreign financial institution or a non-financial foreign entity (including, in some cases, when such foreign financial institution or entity is acting as an intermediary), unless (i) in the case of a foreign financial institution, such institution enters into an agreement with the U.S. government to withhold on certain payments, and to collect and provide to the U.S. tax authorities substantial information regarding U.S. account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with U.S. owners), (ii) in the case of a non-financial foreign entity, such entity certifies that it does not have any substantial U.S. owners or provides the withholding agent with a certification identifying the direct and indirect substantial U.S. owners of the entity, or (iii) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. Under certain circumstances, a holder might be eligible for refunds or credits of such taxes.

Payments subject to withholding tax under this law generally include dividends paid on common stock of a U.S. domestic corporation after June 30, 2014, and gross proceeds from sales or redemptions of such common stock after December 31, 2016. Non-U.S. holders are encouraged to consult their tax advisors regarding the possible implications of this law.

THE FOREGOING DISCUSSION IS FOR GENERAL INFORMATION ONLY AND SHOULD NOT VIEWED AS TAX ADVICE. INVESTORS CONSIDERING THE PURCHASE OF OUR COMMON STOCK ARE URGED TO CONSULT THEIR OWN TAX ADVISORS REGARDING THE APPLICATION OF THE U.S. FEDERAL INCOME AND ESTATE TAX LAWS TO THEIR PARTICULAR SITUATIONS AND THE APPLICABILITY AND EFFECT OF STATE, LOCAL OR FOREIGN TAX LAWS AND TREATIES.

**UNDERWRITING (CONFLICTS OF INTEREST)**

Barclays Capital Inc., Citigroup Global Markets Inc. and J.P. Morgan Securities LLC are acting as the representatives of the underwriters and the joint book-running managers of this offering. Under the terms of an underwriting agreement, which will be filed as an exhibit to the registration statement of which this prospectus forms a part, each of the underwriters named below has severally agreed to purchase from us the respective number of shares of common stock shown opposite its name below:

<u>Underwriters</u>	<u>Number of Shares</u>
Barclays Capital Inc.	
Citigroup Global Markets Inc.	
J.P. Morgan Securities LLC	
Credit Suisse Securities (USA) LLC	
Jefferies LLC	
Wells Fargo Securities, LLC	
<b>Total</b>	

The underwriting agreement will provide that the underwriters' obligation to purchase shares of common stock depends on the satisfaction of the conditions contained in the underwriting agreement, including:

- the obligation to purchase all of the shares of common stock offered hereby (other than those shares of common stock covered by their option to purchase additional shares as described below), if any of the shares are purchased;
- the representations and warranties made by us and the selling stockholder to the underwriters being true;
- there having been no material change in our business or the financial markets; and
- our and the selling stockholder's delivery of customary closing documents to the underwriters.

**Commissions and Expenses**

The following table summarizes the underwriting discounts and commissions we and the selling stockholder will pay to the underwriters. These amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional shares. The underwriting fee is the difference between the initial price to the public and the amount the underwriters pay to us and the selling stockholder for the shares.

	<u>Paid by the Company</u>	
	<u>No Exercise</u>	<u>Full Exercise</u>
Per share		
Total		

	<u>Paid by the Selling Stockholder</u>	
	<u>No Exercise</u>	<u>Full Exercise</u>
Per share		
Total		

The representatives of the underwriters have advised us that the underwriters propose to offer the shares of common stock directly to the public at the public offering price on the cover page of this

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prospectus and to selected dealers, which may include the underwriters, at such offering price less a selling concession not in excess of \$ \_\_\_\_\_ per share. After this offering, the representatives may change the offering price and other selling terms. Sales of shares made outside of the United States may be made by affiliates of the underwriters.

The expenses of this offering that are payable by us are estimated to be approximately \$ \_\_\_\_\_ (excluding underwriting discounts and commissions). We have agreed to pay expenses incurred by the selling stockholder in connection with this offering, other than the underwriting discounts and commissions.

**Option to Purchase Additional Shares**

The selling stockholder has granted the underwriters an option exercisable for 30 days after the date of this prospectus, to purchase, from time to time, in whole or in part, up to an aggregate of \_\_\_\_\_ shares from the selling stockholder at the public offering price less underwriting discounts and commissions. This option may be exercised if the underwriters sell more than \_\_\_\_\_ shares in connection with this offering. To the extent that this option is exercised, each underwriter will be obligated, subject to certain conditions, to purchase its pro rata portion of these additional shares based on the underwriter's underwriting commitment in this offering as indicated in the table at the beginning of this "Underwriting (Conflicts of Interest)" section.

**Lock-Up Agreements**

We, the selling stockholder and all of our directors and executive officers have agreed that, subject to certain exceptions, without the prior written consent of Barclays Capital Inc., we and they will not directly or indirectly, (1) offer for sale, sell, pledge or otherwise dispose of (or enter into any transaction or device that is designed to, or could be expected to, result in the disposition by any person at any time in the future of) any shares of common stock (other than common stock and shares issued pursuant to employee benefit plans, qualified stock option plans or other employee compensation plans existing on the date of this prospectus or described herein) or sell or grant options, rights or warrants with respect to any shares of common stock, (2) enter into any swap or other derivatives transaction that transfers to another, in whole or in part, any of the economic benefits or risks of ownership of the common stock, whether any such transaction described in clause (1) or clause (2) is to be settled by delivery of the common stock or other securities, in cash or otherwise, (3) file or cause to be filed a registration statement, including any amendments thereto, with respect to the registration of any shares of common stock or securities convertible, exercisable or exchangeable into common stock or any of our other securities (other than any registration statement on Form S-8), or (4) publicly disclose the intention to do any of the foregoing for a period of 180 days after the date of this prospectus.

Barclays Capital Inc., in its sole discretion, may release the common stock and other securities subject to the lock-up agreements described above in whole or in part at any time with or without notice. When determining whether or not to release common stock and other securities from lock-up agreements, Barclays Capital Inc. will consider, among other factors, the holder's reasons for requesting the release, the number of shares of common stock and other securities for which the release is being requested and market conditions at the time.

As described below under "Directed Share Program," any participants in the Directed Share Program shall be subject to a 180-day lock up with respect to any shares sold to them pursuant to that program. This lock up will have similar restrictions and an identical extension provision as the lock-up agreement described above. Any shares sold in the Directed Share Program to our directors or officers shall be subject to the lock-up agreement described above.

## **Offering Price Determination**

Prior to this offering, there has been no public market for our common stock. The initial public offering price will be negotiated between the representatives and us. In determining the initial public offering price of our common stock, the representatives will consider:

- the history and prospects for the industry in which we compete;
- our financial information;
- the ability of our management and our business potential and earning prospects;
- the prevailing securities markets at the time of this offering; and
- the recent market prices of, and the demand for, publicly traded shares of generally comparable companies.

## **Indemnification**

We and the selling stockholder have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act and liabilities incurred in connection with the directed share program referred to below, and to contribute to payments that the underwriters may be required to make for these liabilities.

## **Directed Share Program**

At our request, the underwriters have reserved for sale at the initial public offering price up to \_\_\_\_\_ shares offered hereby for officers, directors, employees and certain other persons associated with us. The number of shares available for sale to the general public will be reduced to the extent such persons purchase such reserved shares. Any reserved shares not so purchased will be offered by the underwriters to the general public on the same basis as the other shares offered hereby. Any participants in this program shall be prohibited from selling, pledging or assigning any shares sold to them pursuant to this program for a period of 180 days after the date of this prospectus.

## **Stabilization, Short Positions and Penalty Bids**

The representatives may engage in stabilizing transactions, short sales and purchases to cover positions created by short sales, and penalty bids or purchases for the purpose of pegging, fixing or maintaining the price of the common stock, in accordance with Regulation M under the Exchange Act.

- Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum.
- A short position involves a sale by the underwriters of shares in excess of the number of shares the underwriters are obligated to purchase in this offering, which creates the syndicate short position. This short position may be either a covered short position or a naked short position. In a covered short position, the number of shares involved in the sales made by the underwriters in excess of the number of shares they are obligated to purchase is not greater than the number of shares that they may purchase by exercising their option to purchase additional shares. In a naked short position, the number of shares involved is greater than the number of shares in their option to purchase additional shares. The underwriters may close out any short position by either exercising their option to purchase additional shares and/or purchasing shares in the open market. In determining the source of shares to close out the short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through their option to purchase additional shares. A naked short position is more likely to be created if the underwriters are

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concerned that there could be downward pressure on the price of the shares in the open market after pricing that could adversely affect investors who purchase in this offering.

- Syndicate covering transactions involve purchases of the common stock in the open market after the distribution has been completed in order to cover syndicate short positions.
- Penalty bids permit the representatives to reclaim a selling concession from a syndicate member when the common stock originally sold by the syndicate member is purchased in a stabilizing or syndicate covering transaction to cover syndicate short positions.

These stabilizing transactions, syndicate covering transactions and penalty bids may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of the common stock. As a result, the price of the common stock may be higher than the price that might otherwise exist in the open market. These transactions may be effected on the NYSE or otherwise and, if commenced, may be discontinued at any time.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of the common stock. In addition, neither we nor any of the underwriters make any representation that the representatives will engage in these stabilizing transactions or that any transaction, once commenced, will not be discontinued without notice.

### **Electronic Distribution**

A prospectus in electronic format may be made available on the Internet sites or through other online services maintained by one or more of the underwriters and/or selling group members participating in this offering, or by their affiliates. In those cases, prospective investors may view offering terms online and, depending upon the particular underwriter or selling group member, prospective investors may be allowed to place orders online. The underwriters may agree with us to allocate a specific number of shares for sale to online brokerage account holders. Any such allocation for online distributions will be made by the representatives on the same basis as other allocations.

Other than the prospectus in electronic format, the information on any underwriter's or selling group member's web site and any information contained in any other web site maintained by an underwriter or selling group member is not part of the prospectus or the registration statement of which this prospectus forms a part, has not been approved and/or endorsed by us or any underwriter or selling group member in its capacity as underwriter or selling group member and should not be relied upon by investors.

### **New York Stock Exchange**

We have applied to list our common stock on the NYSE under the symbol "AR". In connection with that listing, the underwriters have undertaken to sell the minimum number of common shares to the minimum number of beneficial owners necessary to meet the NYSE listing requirements.

### **Discretionary Sales**

The underwriters have informed us that they do not intend to confirm sales to discretionary accounts that exceed 5% of the total number of shares offered by them. Certain of the underwriters have informed us that they do not intend to confirm sales to discretionary accounts without the prior specific written approval of the customer. See "—Conflicts of Interest" below.

## Stamp Taxes

If you purchase shares of common stock offered in this prospectus, you may be required to pay stamp taxes and other charges under the laws and practices of the country of purchase, in addition to the offering price listed on the cover page of this prospectus.

## Other Relationships

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. Certain of the underwriters and their respective affiliates have, from time to time, performed, and may in the future perform, various financial advisory and investment banking services for us, for which they received or will receive customary fees and expenses. In particular, affiliates of Barclays Capital Inc., Citigroup Global Markets Inc., J.P. Morgan Securities LLC, Credit Suisse Securities (USA) LLC, Wells Fargo Securities, LLC and \_\_\_\_\_ are lenders under our credit facility. Additionally, an affiliate of J.P. Morgan Securities LLC acts as administrative agent under our credit facility.

In the ordinary course of their various business activities, the underwriters and their respective affiliates may make or hold a broad array of investments, including serving as counterparties to certain derivative and hedging arrangements, and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments of us. The underwriters and their respective affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

## Conflicts of Interest

Affiliates of Barclays Capital Inc., Citigroup Global Markets Inc., J.P. Morgan Securities LLC, Wells Fargo Securities, LLC and \_\_\_\_\_ are lenders under our credit facility. As described in "Use of Proceeds," a portion of the net proceeds from this offering will be used to repay outstanding borrowings under our credit facility and will each receive more than 5% of the net proceeds of this offering due to the repayment of borrowings under the credit facility, such underwriters are deemed to have a conflict of interest within the meaning of Rule 5121 of FINRA. Accordingly, this offering will be conducted in accordance with Rule 5121, which requires, among other things, that a "qualified independent underwriter" has participated in the preparation of, and has exercised the usual standards of "due diligence" with respect to, the registration statement and this prospectus. Jefferies LLC has agreed to act as qualified independent underwriter for this offering and to undertake the legal responsibilities and liabilities of an underwriter under the Securities Act, specifically including those inherent in Section 11 of the Securities Act. Jefferies LLC will not receive any additional fees for serving as qualified independent underwriter in connection with this offering. We have agreed to indemnify Jefferies LLC against liabilities incurred in connection with acting as a qualified independent underwriter, including liabilities under the Securities Act.

Pursuant to Rule 5121, Barclays Capital Inc., Citigroup Global Markets Inc., J.P. Morgan Securities LLC, Wells Fargo Securities, LLC and \_\_\_\_\_ will not confirm any sales to any account over which they exercise discretionary authority without the specific written approval of the account holder. See "Use of Proceeds" for additional information.

## **Selling Restrictions**

### ***European Economic Area***

This document is not a prospectus for the purposes of the Prospectus Directive (as defined below).

In relation to each member state of the European Economic Area that has implemented the Prospectus Directive (as defined below) (each, a relevant member state) with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the relevant implementation date), an offer to the public of any shares of our common stock which are the subject of the offering contemplated by this prospectus, may not be made in that relevant member state other than:

- (a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- (b) to fewer than 100 or, if the relevant member state has implemented the relevant provision of the 2010 PD Amending Directive (as defined below), 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the relevant Dealer or Dealers for any such offer; or
- (c) in any other circumstances failing within Article 3(2) of the Prospectus Directive,

provided that no such offer of our common stock shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For purposes of this provision, the expression an "offer to the public" in relation to any shares of our common stock in any relevant member state means the communication in any form and by any means of sufficient information on the terms of the offer and our common stock to be offered so as to enable an investor to decide to purchase or subscribe for our common stock, as the same may be varied in that relevant member state by any measure implementing the Prospectus Directive in that relevant member state and the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the relevant member state), and includes any relevant implementing measure in each relevant member state and the expression 2010 PD Amending Directive means Directive 2010/73/EU.

The sellers of the shares of our common stock have not authorized and do not authorize the making of any offer of shares through any financial intermediary on their behalf, other than offers made by the underwriters with a view to the final placement of the shares as contemplated in this prospectus. Accordingly, no purchaser of the shares, other than the underwriters, is authorized to make any further offer of the shares on behalf of the sellers or the underwriters.

### ***United Kingdom***

This prospectus is only being distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive, which we refer to as qualified investors, that are also (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, which we refer to as the Order, or (ii) high net worth entities, falling within Article 49(2)(a) to (d) of the Order, and (iii) any other person to whom it may lawfully be communicated pursuant to the Order, all such persons which we refer to together as relevant persons. This prospectus and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other persons in the United Kingdom. Any investment activity to which this prospectus relates will only be available to, and will only be engaged with, relevant persons. Any person in the United Kingdom that is not a relevant person should not act or rely on this document or any of its contents.

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All applicable provisions of the Financial Services and Markets Act 2000 (as amended) must be complied with in respect to anything done by any person in relation to our common stock in, from or otherwise involving the United Kingdom.

### **France**

Neither this prospectus nor any other offering material relating to the shares described in this prospectus has been submitted to the clearance procedures of the Autorité des Marchés Financiers or of the competent authority of another member state of the European Economic Area and notified to the Autorité des Marchés Financiers. The shares have not been offered or sold and will not be offered or sold, directly or indirectly, to the public in France. Neither this prospectus nor any other offering material relating to the shares has been or will be:

- (a) released, issued, distributed or caused to be released, issued or distributed to the public in France; or
- (b) used in connection with any offer for subscription or sale of the shares to the public in France.

Such offers, sales and distributions will be made in France only:

- (a) to qualified investors (investisseurs qualifiés) and/or to a restricted circle of investors (cercle restreint d'investisseurs), in each case investing for their own account, all as defined in, and in accordance with articles L.411-2, D.411-1, D.411-2, D.734-1, D.744-1, D.754-1 and D.764-1 of the French Code monétaire et financier;
- (b) to investment services providers authorized to engage in portfolio management on behalf of third parties; or
- (c) in a transaction that, in accordance with article L.411-2-II-1<sup>o</sup>-or-2<sup>o</sup>-or 3<sup>o</sup> of the French Code monétaire et financier and article 211-2 of the General Regulations (Règlement Général) of the Autorité des Marchés Financiers, does not constitute a public offer (appel public à l'épargne).

The shares may be resold directly or indirectly, only in compliance with articles L.411-1, L.411-2, L.412-1 and L.621-8 through L.621-8-3 of the French Code monétaire et financier.

### **Switzerland**

This document, as well as any other material relating to the shares which are the subject of the offering contemplated by this prospectus, do not constitute an issue prospectus pursuant to Article 652a and/or 1156 of the Swiss Code of Obligations. The shares will not be listed on the SIX Swiss Exchange and, therefore, the documents relating to the shares, including, but not limited to, this document, do not claim to comply with the disclosure standards of the listing rules of the SIX Swiss Exchange. The shares are being offered in Switzerland by way of a private placement, i.e., to a small number of selected investors only, without any public offer and only to investors who do not purchase the shares with the intention to distribute them to the public. The investors will be individually approached by the issuer from time to time. This document, as well as any other material relating to the shares, is personal and confidential and do not constitute an offer to any other person. This document may only be used by those investors to whom it has been handed out in connection with the offering described herein and may neither directly nor indirectly be distributed or made available to other persons without express consent of the issuer. It may not be used in connection with any other offer and shall in particular not be copied and/or distributed to the public in (or from) Switzerland.



### ***Hong Kong***

The shares of our common stock offered hereby may not be offered or sold in Hong Kong, by means of any document, other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made under that Ordinance, or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies Ordinance (Cap. 32, Laws of Hong Kong), or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the shares of our common stock offered hereby may be issued or may be in the possession of any person for the purpose of the issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to the shares of our common stock offered hereby which are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) or any rules made under that Ordinance.

### ***Japan***

The shares offered in this prospectus have not been registered under the Securities and Exchange Law of Japan. The shares have not been offered or sold and will not be offered or sold, directly or indirectly, in Japan or to or for the account of any resident of Japan, except (i) pursuant to an exemption from the registration requirements of the Securities and Exchange Law and (ii) in compliance with any other applicable requirements of Japanese law.

### ***Singapore***

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares of our common stock offered hereby may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Future Act, Chapter 289 of Singapore, which we refer to as the SFA, (ii) to a "relevant person" as defined in Section 275(2) of the SFA, or any person pursuant to Section 275 (1A), and in accordance with the conditions, specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares of our common stock offered hereby are subscribed and purchased under Section 275 of the SFA by a relevant person which is:

- (a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- (b) a trust (where the trustee is not an accredited investor (as defined in Section 4A of the SFA)) whose sole whole purpose is to hold investments and each beneficiary is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferable within six months after that corporation or that trust has acquired the shares under Section 275 of the SFA except
  - (i) to an institutional investor under Section 274 of the SFA or to a relevant person (as defined in Section 275(2) of the SFA) and in accordance with the conditions, specified in Section 275 of the SFA;

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- (ii) (in the case of a corporation) where the transfer arises from an offer referred to in Section 275(1A) of the SFA, or (in the case of a trust) where the transfer arises from an offer that is made on terms that such rights or interests are acquired at a consideration of not less than \$200,000 (or its equivalent in a foreign currency) for each transaction, whether such amount is to be paid for in cash or by exchange of securities or other assets;
- (iii) where no consideration is or will be given for the transfer; or
- (iv) where the transfer is by operation of law.

By accepting this prospectus, the recipient hereof represents and warrants that he is entitled to receive it in accordance with the restrictions set forth above and agrees to be bound by limitations contained herein. Any failure to comply with these limitations may constitute a violation of law.

***Australia***

No prospectus or other disclosure document (as defined in the Corporations Act 2001 (Cth) of Australia, or the Corporations Act) in relation to the common stock has been or will be lodged with the Australian Securities & Investments Commission, or ASIC. This document has not been lodged with ASIC and is only directed to certain categories of exempt persons. Accordingly, if you receive this document in Australia:

- (a) you confirm and warrant that you are either:
  - (i) a "sophisticated investor" under section 708(8)(a) or (b) of the Corporations Act;
  - (ii) a "sophisticated investor" under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant's certificate to us which complies with the requirements of section 708(8)(c)(i) or (ii) of the Corporations Act and related regulations before the offer has been made;
  - (iii) a person associated with the company under section 708(12) of the Corporations Act; or
  - (iv) a "professional investor" within the meaning of section 708(11)(a) or (b) of the Corporations Act, and to the extent that you are unable to confirm or warrant that you are an exempt sophisticated investor, associated person or professional investor under the Corporations Act any offer made to you under this document is void and incapable of acceptance; and
- (b) you warrant and agree that you will not offer any of the common stock for resale in Australia within 12 months of that common stock being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

## LEGAL MATTERS

The validity of our common stock offered by this prospectus will be passed upon for us by Vinson & Elkins L.L.P., Houston, Texas. Certain legal matters in connection with this offering will be passed upon for the underwriters by Latham & Watkins LLP, Houston, Texas.

## EXPERTS

The consolidated financial statements of Antero Resources LLC as of December 31, 2011 and 2012 and for each of the years in the three-year period ended December 31, 2012 have been included herein in reliance upon the report of KPMG LLP, independent registered public accounting firm, appearing elsewhere herein and upon the authority of said firm as experts in accounting and auditing.

Estimates of our natural gas and oil reserves, related future net cash flows and the present values thereof related to our Appalachian Basin properties as of December 31, 2012, 2011 and 2010 included elsewhere in this prospectus were based in part upon reserve reports audited by independent petroleum engineers, DeGolyer and MacNaughton. Estimates of our natural gas and oil reserves, related future net cash flows and the present values thereof related to our Piceance Basin properties as of December 31, 2011 and 2010 included elsewhere in this prospectus were based in part in upon reserve reports audited by independent petroleum engineers, Ryder Scott & Company. We have included these estimates in reliance on the authority of such firms as experts in such matters.

## WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 (including the exhibits, schedules and amendments thereto) under the Securities Act, with respect to the shares of our common stock offered hereby. This prospectus does not contain all of the information set forth in the registration statement and the exhibits and schedules thereto. For further information with respect to the common stock offered hereby, we refer you to the registration statement and the exhibits and schedules filed therewith. Statements contained in this prospectus as to the contents of any contract, agreement or any other document are summaries of the material terms of such contract, agreement or other document and are not necessarily complete. With respect to each of these contracts, agreements or other documents filed as an exhibit to the registration statement, reference is made to the exhibits for a more complete description of the matter involved. A copy of the registration statement, and the exhibits and schedules thereto, may be inspected without charge at the public reference facilities maintained by the SEC at 100 F Street NE, Washington, D.C. 20549. Copies of these materials may be obtained, upon payment of a duplicating fee, from the Public Reference Room of the SEC at 100 F Street NE, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room. The SEC maintains a website that contains reports, proxy and information statements and other information regarding registrants that file electronically with the SEC. The address of the SEC's website is [www.sec.gov](http://www.sec.gov).

As a result of the offering, we will become subject to full information requirements of the Exchange Act. We will fulfill our obligations with respect to such requirements by filing periodic reports and other information with the SEC. We intend to furnish our stockholders with annual reports containing financial statements certified by an independent public accounting firm.

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***Introductory Note to Financial Statements***

The historical consolidated financial statements of Antero Resources LLC presented herein include the accounts of Antero Resources LLC and its direct or indirect wholly owned subsidiaries, Antero Resources Corporation (successor to Antero Resources Appalachian Corporation), Antero Resources Bluestone LLC, and Antero Resources Finance Corporation. Antero Resources Piceance LLC (successor to Antero Resources Piceance Corporation), which owned the Piceance Basin assets along with Antero Resources Pipeline LLC (successor to Antero Resources Pipeline Corporation), and Antero Resources Arkoma LLC (successor to Antero Resources Corporation), which owned the Arkoma Basin assets, were merged into Antero Resources Appalachian Corporation in February 2013. Antero Resources Appalachian Corporation then changed its name to Antero Resources Corporation. Antero Resources LLC has no assets other than its investment in Antero Resources Corporation and will be merged into Antero Resources Corporation upon the completion of this offering. The financial statements of Antero Resources LLC and Antero Resources Corporation will continue to be identical with respect to the underlying financial information at such time.

Antero Resources LLC and Antero Resources Corporation file separate federal and state income tax returns; Antero Resources LLC is not subject to income taxes because it is a pass-through entity for federal and state tax purposes. Antero Resources Corporation has provided for income taxes in its financial statements and the income tax provisions and liabilities of the registrant will not change as a result of the merger of Antero Resources LLC and Antero Resources Corporation upon the completion of this offering.

## ANTERO RESOURCES LLC AND SUBSIDIARIES

## Condensed Consolidated Balance Sheets

December 31, 2012 and March 31, 2013

(Unaudited)

(In thousands)

	2012	2013
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 18,989	4,806
Accounts receivable—trade, net of allowance for doubtful accounts of \$174 and \$10 in 2012 and 2013, respectively	21,296	31,840
Notes receivable—short-term portion	4,555	5,222
Accrued revenue	46,669	52,618
Derivative instruments	160,579	89,751
Other	22,518	10,807
Total current assets	<u>274,606</u>	<u>195,044</u>
Property and equipment:		
Natural gas properties, at cost (successful efforts method):		
Unproved properties	1,243,237	1,392,152
Proved properties	1,689,132	2,107,151
Gathering systems and facilities	168,930	238,234
Other property and equipment	9,517	10,238
	<u>3,110,816</u>	<u>3,747,775</u>
Less accumulated depletion, depreciation, and amortization	<u>(173,343)</u>	<u>(213,707)</u>
Property and equipment, net	<u>2,937,473</u>	<u>3,534,068</u>
Derivative instruments	371,436	329,575
Notes receivable—long-term portion	2,667	444
Other assets, net	32,611	33,748
Total assets	<u>\$3,618,793</u>	<u>4,092,879</u>
<b>Liabilities and Equity</b>		
Current liabilities:		
Accounts payable	\$ 181,478	267,238
Accrued liabilities	61,161	88,371
Derivative instruments	—	7,382
Revenue distributions payable	46,037	53,074
Current portion of long-term debt	25,000	25,000
Deferred income tax liability	62,620	32,039
Total current liabilities	<u>376,296</u>	<u>473,104</u>
Long-term liabilities:		
Long-term debt	1,444,058	1,862,530
Deferred income tax liability	91,692	91,873
Other long-term liabilities	33,010	39,632
Total liabilities	<u>1,945,056</u>	<u>2,467,139</u>
Equity:		
Members' equity	1,460,947	1,460,947
Accumulated earnings	212,790	164,793
Total equity	<u>1,673,737</u>	<u>1,625,740</u>
Total liabilities and equity	<u>\$3,618,793</u>	<u>4,092,879</u>

See accompanying notes to condensed consolidated financial statements.

ANTERO RESOURCES LLC AND SUBSIDIARIES

Condensed Consolidated Statements of Operations and Comprehensive Income (Loss)

Three Months ended March 31, 2012 and 2013

(Unaudited)

(In thousands)

	2012	2013
<b>Revenue:</b>		
Natural gas sales	\$ 45,134	121,946
Natural gas liquids sales	—	10,572
Oil sales	48	877
Realized and unrealized gain (loss) on derivative instruments (including unrealized gains (losses) of \$170,402 and \$(120,072) in 2012 and 2013, respectively)	217,254	(71,941)
Gain on sale of assets	291,305	—
<b>Total revenue</b>	<b>553,741</b>	<b>61,454</b>
<b>Operating expenses:</b>		
Lease operating expenses	693	1,071
Gathering, compression and transportation	11,575	40,970
Production taxes	3,742	8,619
Exploration expenses	1,804	4,362
Impairment of unproved properties	286	1,556
Depletion, depreciation and amortization	16,110	40,364
Accretion of asset retirement obligations	22	264
General and administrative	9,173	12,717
<b>Total operating expenses</b>	<b>43,405</b>	<b>109,923</b>
Operating income (loss)	510,336	(48,469)
Interest expense	(24,370)	(29,928)
Income (loss) from continuing operations before income taxes and discontinued operations	485,966	(78,397)
Income tax (expense) benefit	(198,411)	30,400
Income (loss) from continuing operations	287,555	(47,997)
<b>Discontinued operations:</b>		
Income from results of operations and sale of discontinued operations	40,176	—
<b>Net income (loss) and comprehensive income (loss) attributable to Antero equity owners</b>	<b>\$ 327,731</b>	<b>(47,997)</b>
<b>Pro forma information</b>		
<b>Pro forma earnings (loss) per common share—basic</b>		
Income from continuing operations	\$	\$
Discontinued operations	\$	\$
Net income	\$	\$
<b>Pro forma earnings (loss) per common share—diluted</b>		
Income from continuing operations	\$	\$
Discontinued operations	\$	\$
Net income	\$	\$
<b>Pro forma weighted average number of shares outstanding:</b>		
Basic		
Diluted		

See accompanying notes to condensed consolidated financial statements.

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Condensed Consolidated Statements of Cash Flows**

**Three Months ended March 31, 2012 and 2013**

**Unaudited**

**(In thousands)**

	<u>2012</u>	<u>2013</u>
Cash flows from operating activities:		
Net income (loss)	\$ 327,731	(47,997)
Adjustment to reconcile net income to net cash provided by operating activities:		
Depletion, depreciation, amortization, and accretion	16,110	40,628
Impairment of unproved properties	286	1,556
Unrealized (gains) losses on derivative instruments, net	(170,402)	120,072
Gain on sale of assets	(291,305)	—
Deferred income tax expense (benefit)	181,911	(30,400)
Depletion, depreciation, amortization, accretion, and impairment of unproved properties—discontinued operations	32,418	—
Unrealized losses on derivative instruments, net—discontinued operations	(32,561)	—
Deferred income tax expense (benefit)—discontinued operations	14,444	—
Other	1,165	1,387
Changes in current assets and liabilities:		
Accounts receivable	(14,061)	(10,545)
Accrued revenue	10,116	(5,948)
Other current assets	313	11,711
Accounts payable	(2,864)	(1,584)
Accrued liabilities	7,692	24,290
Revenue distributions payable	2,998	7,037
Other	16,500	—
Net cash provided by operating activities	<u>100,491</u>	<u>110,207</u>
Cash flows from investing activities:		
Additions to unproved properties	(64,181)	(148,972)
Drilling costs	(164,288)	(343,985)
Additions to gathering systems and facilities	(23,807)	(55,975)
Additions to other property and equipment	(270)	(721)
Proceeds from asset sales	376,805	—
Changes in other assets	440	1,768
Net cash from (used in) investing activities	<u>124,699</u>	<u>(547,885)</u>
Cash flows from financing activities:		
Issuance of senior notes	—	231,750
Borrowings on bank credit facility, net	(222,000)	187,000
Payments of deferred financing costs	—	(3,014)
Other	(40)	7,759
Net cash provided by (used in) financing activities	<u>(222,040)</u>	<u>423,495</u>
Net increase (decrease) in cash and cash equivalents	3,150	(14,183)
Cash and cash equivalents, beginning of period	3,343	18,989
Cash and cash equivalents, end of period	<u>\$ 6,493</u>	<u>4,806</u>
Supplemental disclosure of cash flow information:		
Cash paid during the period for interest	\$ (17,288)	(16,160)
Supplemental disclosure of noncash investing activities:		
Increase in accounts payable for additions to properties, gathering systems and facilities	\$ 7,146	88,843

See accompanying notes to condensed consolidated financial statements.

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Condensed Consolidated Financial Statements**

**December 31, 2012 and March 31, 2013**

**(1) Business and Organization**

Antero Resources LLC, a limited liability company, and its consolidated operating subsidiaries (collectively referred to as the Company, we, or our) are engaged in the exploration for and the production of natural gas, natural gas liquids (NGLs), and oil onshore in the United States in unconventional reservoirs, which can generally be characterized as fractured shales and tight sand formations. Our properties are primarily located in the Appalachian Basin in West Virginia, Ohio, and Pennsylvania. During 2012 we sold our Arkoma Basin properties and our Piceance Basin properties. We also have certain midstream gathering and pipeline operations which are ancillary to our interests in producing properties. Our corporate headquarters are in Denver, Colorado.

Our consolidated financial statements as of March 31, 2013 include the accounts of Antero Resources LLC, and its directly and indirectly owned subsidiaries. The subsidiaries include Antero Resources Appalachian Corporation (Antero Corporation) and its wholly owned subsidiaries, Antero Resources Bluestone LLC and Antero Resources Finance Corporation (Antero Finance) (collectively referred to as the Antero Entities).

**(2) Basis of Presentation and Significant Accounting Policies**

*(a) Basis of Presentation*

These consolidated financial statements have been prepared pursuant to the rules and regulations of the Securities and Exchange Commission (the SEC) applicable to interim financial information and should be read in the context of the December 31, 2012 consolidated financial statements and notes thereto for a more complete understanding of the Company's operations, financial position, and accounting policies. The December 31, 2012 consolidated financial statements have been filed with the SEC in the Company's Annual Report on Form 10-K for the year ended December 31, 2012.

The accompanying unaudited consolidated financial statements of the Company have been prepared in accordance with accounting principles generally accepted in the United States (GAAP) for interim financial information, and, accordingly, do not include all of the information and footnotes required by GAAP for complete consolidated financial statements. In the opinion of management, the accompanying unaudited consolidated financial statements include all adjustments (consisting of normal and recurring accruals) considered necessary to present fairly the Company's financial position as of March 31, 2013, and the results of its operations and its cash flows for the three months ended March 31, 2012 and 2013. We have no items of other comprehensive income or loss; therefore, our net income (loss) is identical to our comprehensive income (loss). All significant intercompany accounts and transactions have been eliminated. Operating results for the period ended March 31, 2013 are not necessarily indicative of the results that may be expected for the full year because of the impact of fluctuations in prices received for natural gas and oil, natural production declines, the uncertainty of exploration and development drilling results, and other factors.

The Company's exploration and production activities are accounted for under the successful efforts method. As of the date these financial statements were filed with the Securities and Exchange Commission, the Company completed its evaluation of potential subsequent events for disclosure and no items requiring disclosure were identified, other than the amendment to the senior credit facility discussed in note 4(a).



**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Condensed Consolidated Financial Statements (Continued)**

**December 31, 2012 and March 31, 2013**

**(2) Basis of Presentation and Significant Accounting Policies (Continued)**

***(b) Use of Estimates***

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Changes in facts and circumstances or discovery of new information may result in revised estimates, and actual results could differ from those estimates.

The Company's financial statements are based on a number of significant judgments, assumptions, and estimates, including estimates of gas and oil reserve quantities, which are the basis for the calculation of depreciation, depletion, and amortization, present value of future reserves, and impairment of oil and gas properties. Reserve estimates are, by their nature, inherently imprecise.

***(c) Risks and Uncertainties***

Historically, the market for natural gas has experienced significant price fluctuations. Prices for natural gas are volatile; price fluctuations can result from variations in weather, levels of production in a given region, availability of transportation capacity to other regions of the country, and various other factors. Increases or decreases in prices received could have a significant impact on the Company's future results of operations.

***(d) Cash and Cash Equivalents***

The Company considers all liquid investments purchased with an initial maturity of three months or less to be cash equivalents. The carrying value of cash and cash equivalents approximates fair value due to the short-term nature of these investments.

***(e) Derivative Financial Instruments***

In order to manage its exposure to oil and gas price volatility, the Company enters into derivative transactions from time to time, which may include commodity swap agreements, collar agreements, and other similar agreements relating to natural gas expected to be produced. From time to time, the Company may also enter into derivative contracts to mitigate the effects of interest rate fluctuations. To the extent legal right of offset with a counterparty exists, the Company reports derivative assets and liabilities on a net basis. The Company has exposure to credit risk to the extent the counterparty is unable to satisfy its settlement obligation. The fair value of our commodity derivative contracts of approximately \$412 million at March 31, 2013 includes the following asset (liability) values by bank counterparty: BNP Paribas—\$114 million; Credit Suisse—\$105 million; Wells Fargo—\$64 million; JP Morgan—\$75 million; Barclays—\$46 million; Deutsche Bank—\$8 million; Union Bank—\$1 million; Citigroup \$(2) million; Toronto Dominion Bank—\$(2) million; and KeyBank \$(1) million. Additionally, contracts with Dominion Field Services account for \$4 million of the fair value. The credit ratings of certain of these banks were downgraded in 2011 because of the sovereign debt crisis in Europe. The estimated fair value of our commodity derivative assets has been risk adjusted using a discount rate based upon the respective published credit default swap rates (if available, or if not available, a discount rate based on the applicable Reuters bond rating) at March 31, 2013 for each of the European and American banks. We believe that all of these institutions currently are acceptable credit risks.

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Condensed Consolidated Financial Statements (Continued)**

**December 31, 2012 and March 31, 2013**

**(2) Basis of Presentation and Significant Accounting Policies (Continued)**

The Company records derivative instruments on the consolidated balance sheets as either an asset or liability measured at fair value and records changes in the fair value of derivatives in current earnings as they occur. Changes in the fair value of commodity derivatives are classified as revenues, and changes in the fair value of interest rate derivatives are classified as other income (expense).

***(f) Fair Value Measurements***

Authoritative accounting guidance defines fair value, establishes a framework for measuring fair value, and requires disclosures about fair value measurements. This guidance also relates to all nonfinancial assets and liabilities that are not recognized or disclosed on a recurring basis (e.g., those measured at fair value in a business combination, the initial recognition of asset retirement obligations, and impairments of proved oil and gas properties, and other long-lived assets). The fair value is the price that the Company estimates would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. A fair value hierarchy is used to prioritize input to valuation techniques used to estimate fair value. An asset or liability subject to the fair value requirements is categorized within the hierarchy based on the lowest level of input that is significant to the fair value measurement. The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires judgment and considers factors specific to the asset or liability. The highest priority (Level 1) is given to unadjusted quoted market prices in active markets for identical assets or liabilities, and the lowest priority (Level 3) is given to unobservable inputs. Level 2 inputs are data, other than quoted prices included within Level 1, that are observable for the asset or liability, either directly or indirectly. Instruments that are valued using Level 2 inputs include nonexchange traded derivatives, such as over-the-counter commodity price swaps, basis swaps, and interest rate swaps. Valuation models used to measure fair value of these instruments consider various Level 2 inputs including (i) quoted forward prices for commodities, (ii) time value, (iii) quoted forward interest rates, (iv) current market prices and contractual prices for the underlying instruments, (v) risk of nonperformance by the Company and the counterparty, and (vi) other relevant economic measures. The Company utilizes its counterparties to assess the reasonableness of its prices and valuation techniques. To the extent a legal right of offset with a counterparty exists, the derivative assets and liabilities are reported on a net basis.

***(g) Income Taxes***

Antero Resources LLC and its subsidiary file separate federal and state income tax returns. Antero Resources LLC is a partnership for income tax purposes and therefore is not subject to federal or state income taxes. The tax on the income of Antero Resources LLC is borne by the individual members through the allocation of taxable income.

Antero Corporation and its subsidiary recognize deferred tax assets and liabilities for temporary differences resulting from net operating loss carryforwards for income tax purposes and the differences between the financial statement and tax basis of assets and liabilities. The effect of changes in the tax laws or tax rates is recognized in income in the period such changes are enacted. Deferred tax assets are reduced by a valuation allowance, when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized.

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Condensed Consolidated Financial Statements (Continued)**

**December 31, 2012 and March 31, 2013**

**(2) Basis of Presentation and Significant Accounting Policies (Continued)**

Unrecognized tax benefits represent potential future tax obligations for uncertain tax positions taken on previously filed tax returns that may not ultimately be sustained. The Company recognizes interest expense related to unrecognized tax benefits in interest expense and fines and penalties as income tax expense. The tax years 2009 through 2012 remain open to examination by the U.S. Internal Revenue Service. The Company files tax returns with various state taxing authorities which remain open to examination for tax years 2008 through 2012.

***(h) Impairment of Unproved Properties***

Unproved properties with significant acquisition costs are assessed for impairment on a property-by-property basis, and any impairment in value is charged to expense. Impairment is assessed based on remaining lease terms, drilling results, reservoir performance, commodity price outlooks, and future plans to develop acreage. Other unproved properties are assessed for impairment on an aggregate basis.

Impairment of unproved properties during the three months ended March 31, 2012 and 2013 was \$1 million and \$2 million, respectively.

***(i) Industry Segment and Geographic Information***

We have evaluated how the Company is organized and managed and have identified one operating segment—the exploration and production of oil, natural gas, and natural gas liquids. We consider our gathering, processing, and marketing functions as ancillary to our oil and gas producing activities. All of our assets are located in the United States and all of our revenues are attributable to United States customers.

***(j) Guarantees***

In November 2009 and January 2010, an indirect wholly owned finance subsidiary of Antero Resources LLC, Antero Finance, issued \$375 million and \$150 million, respectively, of 9.375% senior notes due December 1, 2017. In August 2011, Antero Finance issued \$400 million of 7.25% senior notes due August 1, 2019. In November 2012 and February 2013, Antero Finance issued \$300 million and \$225 million of 6.00% senior notes due December 1, 2020. For purposes of this footnote, we collectively refer to the 2017 senior notes, the 2019 senior notes and the 2020 senior notes as the "senior notes."

Antero Resources LLC, as the parent company (for purposes of this footnote only, the Parent Company), has no independent assets or operations. Antero Finance is a 100% indirectly owned finance subsidiary of Parent Company. The senior notes are each guaranteed on a senior unsecured basis by Parent Company and all of Parent Company's wholly owned subsidiaries (other than Antero Finance) and certain of its future restricted subsidiaries. The guarantees are full and unconditional and joint and several. The guarantor subsidiaries may be released from those guarantees upon the occurrence of certain events, including (i) the designation of that subsidiary guarantor as an unrestricted subsidiary; (ii) the release or discharge of any guarantee or indebtedness that resulted in the creation of the guarantee of the senior notes by such subsidiary guarantor; or (iii) the sale or other disposition, including the sale of substantially all of the assets, of that subsidiary guarantor. There are

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Condensed Consolidated Financial Statements (Continued)**

**December 31, 2012 and March 31, 2013**

**(2) Basis of Presentation and Significant Accounting Policies (Continued)**

no significant restrictions on Antero Finance's ability to obtain funds from the Parent Company or the subsidiary guarantors by dividend or loan, except those imposed by applicable law. However, the indentures governing the senior notes and the Credit Facility agreement contain significant restrictions on the ability of Antero Finance or the subsidiary guarantors to make distributions to the Parent Company. Finally, the Parent Company's wholly owned subsidiaries do not have restricted assets that exceed 25% of net assets as of the most recent fiscal year end that may not be transferred to the Parent Company in the form of loans, advances or cash dividends by the subsidiaries without the consent of a third party.

**(3) Sale of Piceance and Arkoma Properties—Discontinued Operations**

On December 21, 2012 the Company completed the sale of its Piceance Basin assets. The \$316 million of net proceeds from the sale represented the purchase price of \$325 million, adjusted for expenses of the sale and estimated income, expenses, and capital costs related to the Piceance Basin properties from the October 1, 2012 effective date of the sale through December 21, 2012. The Company recognized a loss of \$364 million on the sale of the Piceance Basin assets in the fourth quarter of 2012. The purchaser also assumed all of the Company's Rocky Mountain firm transportation obligations, which totaled approximately \$100 million. In connection with the sale of the Piceance Basin assets, the Company also liquidated its hedge positions related to the Piceance Basin and realized additional proceeds from these transactions of approximately \$100 million.

On June 29, 2012 the Company completed its sale of its Arkoma Basin assets and the commodity hedges associated with the Arkoma assets. Proceeds from the sale of \$427 million represent the purchase price of \$445 million adjusted for expenses of the sale and estimated income, expenses, and capital costs from the effective date of the sale through the closing date of June 29, 2012. The Company recognized a loss of \$432 million on the sale of the Arkoma Basin assets in the second quarter of 2012.

Results of operations for the three months ended March 31, 2012 for the Piceance Basin and Arkoma Basin assets are shown as discontinued operations on the accompanying Consolidated

## ANTERO RESOURCES LLC AND SUBSIDIARIES

## Notes to Condensed Consolidated Financial Statements (Continued)

December 31, 2012 and March 31, 2013

## (3) Sale of Piceance and Arkoma Properties—Discontinued Operations (Continued)

Statement of Operations and Comprehensive Income (Loss) and are comprised of the following (in thousands):

	Three months ended March 31, 2012
Sales of oil, natural gas, and natural gas liquids	\$ 47,303
Realized gains on derivative instruments	33,227
Unrealized gains on derivative instruments	32,561
Total revenues	113,091
Lease operating expenses	7,634
Gathering, compression, and transportation	16,373
Production taxes	1,834
Exploration expenses	212
Impairment of unproved properties	750
Depletion, depreciation, and amortization	31,562
Accretion of asset retirement obligations	106
Total expenses	58,471
Income from discontinued operations before income taxes	54,620
Income tax expense	(14,444)
Net income from discontinued operations attributable to Antero equity owners	\$ 40,176

## (4) Long-term Debt

Long-term debt consists of the following at December 31, 2012 and March 31, 2013 (in thousands):

	December 31, 2012	March 31, 2013
Bank credit facility (a)	\$ 217,000	404,000
9.375% senior notes due 2017 (b)	525,000	525,000
7.25% senior notes due 2019 (c)	400,000	400,000
6.00% senior notes due 2020 (d)	300,000	525,000
9.0% senior note (d)	25,000	25,000
Net premium	2,058	8,530
	1,469,058	1,887,530
Less amounts due within one year	25,000	25,000
Total	\$ 1,444,058	1,862,530

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Condensed Consolidated Financial Statements (Continued)**

**December 31, 2012 and March 31, 2013**

**(4) Long-term Debt (Continued)**

***(a) Bank Credit Facility***

The Company has a senior secured revolving bank credit facility (the Credit Facility) with a consortium of bank lenders. The maximum amount of the Credit Facility is \$2.5 billion. Borrowings under the Credit Facility are subject to borrowing base limitations based on the collateral value of our proved properties and commodity hedge positions and are subject to regular semiannual redeterminations. The Credit Facility was amended as of May 9, 2013 to (i) increase the borrowing base from \$1.22 billion to \$1.75 billion, (ii) to increase lender commitments from \$700 million to \$1.2 billion, and (iii) to amend the current ratio covenant to .75 to 1.0 at March 31, 2013 and 1.0 to 1.0 thereafter. The next redetermination of the borrowing base is scheduled to occur in October 2013. The maturity date of the Credit Facility is May 12, 2016.

The Credit Facility is secured by mortgages on substantially all of the Company's properties and guarantees from the Company's operating subsidiaries. The Credit Facility contains certain covenants, including restrictions on indebtedness and dividends, and requirements with respect to working capital and interest coverage ratios. Interest is payable at a variable rate based on LIBOR or the prime rate based on the Company's election at the time of borrowing. The Company was in compliance with all of the financial covenants under the Credit Facility, as of December 31, 2012 and March 31, 2013.

As of March 31, 2013, the Company had an outstanding balance under the Credit Facility of \$404 million, with a weighted average interest rate of 2.5%, and outstanding letters of credit of approximately \$32 million. As of December 31, 2012, the Company had an outstanding balance under the Credit Facility of \$217 million, with a weighted average interest rate of 1.91%, and outstanding letters of credit of approximately \$43 million. Commitment fees on the unused portion of the Credit Facility are due quarterly at rates ranging from 0.375% to 0.50% of the unused facility based on utilization.

***(b) 9.375% Senior Notes Due 2017***

On November 17, 2009, an indirect wholly owned finance subsidiary of Antero Resources LLC, Antero Finance, issued \$375 million of 9.375% senior notes due December 1, 2017 at a discount of \$2.6 million. In January 2010, the Company issued an additional \$150 million of the same series of 9.375% senior notes at a premium of \$6.0 million. The notes are unsecured and effectively subordinated to the Company's Credit Facility to the extent of the value of the collateral securing the Credit Facility. The notes are guaranteed on a full and unconditional basis and jointly and severally by Antero Resources LLC, all of its wholly owned subsidiaries (other than Antero Finance), and certain of its future restricted subsidiaries. Antero Resources LLC has no independent assets or operations. Interest on the notes is payable on June 1 and December 1 of each year. Antero Finance may redeem all or part of the notes at any time on or after December 1, 2013 at redemption prices ranging from 104.688% on or after December 1, 2013 to 100.00% on or after December 1, 2015. At any time prior to December 1, 2013, Antero Finance may also redeem the notes, in whole or in part, at a price equal to 100% of the principal amount of the notes plus a "make-whole" premium. If Antero Resources LLC undergoes a change of control, Antero Finance may be required to offer to purchase notes from the holders. Antero Resources LLC, the stand-alone parent entity, has insignificant independent assets and no operations. There are no restrictions on the Company's ability to obtain cash dividends or other distributions of funds from its subsidiaries, except those imposed by applicable law.

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Condensed Consolidated Financial Statements (Continued)**

**December 31, 2012 and March 31, 2013**

**(4) Long-term Debt (Continued)**

***(c) 7.25% Senior Notes Due 2019***

On August 1, 2011, Antero Finance issued \$400 million of 7.25% senior notes due August 1, 2019 at par. The notes are unsecured and effectively subordinated to the Company's Credit Facility to the extent of the value of the collateral securing the Credit Facility. The notes rank pari passu to the existing 9.375% senior notes. The notes are guaranteed on a senior unsecured basis by Antero Resources LLC, all of its wholly owned subsidiaries (other than Antero Finance), and certain of its future restricted subsidiaries. Interest on the notes is payable on August 1 and February 1 of each year. Antero Finance may redeem all or part of the notes at any time on or after August 1, 2014 at redemption prices ranging from 105.438% on or after August 1, 2014 to 100.00% on or after August 1, 2017. In addition, on or before August 1, 2014, Antero Finance may redeem up to 35% of the aggregate principal amount of the notes with the net cash proceeds of certain equity offerings, if certain conditions are met, at a redemption price of 107.25% of the principal amount of the notes, plus accrued interest. At any time prior to August 1, 2014, Antero Finance may redeem the notes, in whole or in part, at a price equal to 100% of the principal amount of the notes plus a "make-whole" premium and accrued interest. If Antero Resources LLC undergoes a change of control, the note holders will have the right to require Antero Finance to repurchase all or a portion of the notes at a price equal to 101% of the principal amount of the notes, plus accrued interest.

***(d) 6.00% Senior Notes Due 2020***

On November 19, 2012, Antero Finance issued \$300 million of 6.00% senior notes due December 1, 2020 at par. In a subsequent transaction, on February 4, 2013 Antero Finance issued an additional \$225 million of the 6.00% notes at 103% of par. The notes are unsecured and effectively subordinated to the Company's Credit Facility to the extent of the value of the collateral securing the Credit Facility. The notes rank pari passu to the existing 9.375% and 7.25% senior notes. The notes are guaranteed on a senior unsecured basis by Antero Resources LLC, all of its wholly owned subsidiaries (other than Antero Finance), and certain of its future restricted subsidiaries. Interest on the notes is payable on June 1 and December 1 of each year, commencing on June 1, 2013. Antero Finance may redeem all or part of the notes at any time on or after December 1, 2015 at redemption prices ranging from 104.500% on or after December 1, 2015 to 100.00% on or after December 1, 2018. In addition, on or before December 1, 2015, Antero Finance may redeem up to 35% of the aggregate principal amount of the notes with the net cash proceeds of certain equity offerings, if certain conditions are met, at a redemption price of 106.00% of the principal amount of the notes, plus accrued interest. At any time prior to December 1, 2015, Antero Finance may redeem the notes, in whole or in part, at a price equal to 100% of the principal amount of the notes plus a "make-whole" premium and accrued interest. If a change of control (as defined in the bond indenture) occurs at any time prior to January 1, 2014, Antero Finance may, at its option, redeem all, but not less than all, of the notes at a redemption price equal to 110% of the principal amount of the notes, plus accrued interest. If Antero Resources LLC undergoes a change of control, the note holders will have the right to require Antero Finance to repurchase all or a portion of the notes at a price equal to 101% of the principal amount of the notes, plus accrued interest.

**ANTERO RESOURCES LLC AND SUBSIDIARIES****Notes to Condensed Consolidated Financial Statements (Continued)****December 31, 2012 and March 31, 2013****(4) Long-term Debt (Continued)***(e) 9.00% Senior Note*

The Company assumed a \$25 million unsecured note payable in the business acquisition consummated on December 1, 2010. The note bears interest at 9% and is due December 1, 2013.

*(f) Treasury Management Facility*

The Company has a stand-alone revolving note with a lender under the Credit Facility which provides for up to \$25 million of cash management obligations in order to facilitate the Company's daily treasury management. Borrowings under the revolving note are secured by the collateral for the revolving credit facility. Borrowings under the facility bear interest at the lender's prime rate plus 1.0%. The note matures on June 1, 2013. At March 31, 2013 and December 31, 2012, there were no outstanding borrowings under this facility.

**(5) Ownership Structure**

At December 31, 2012 and March 31, 2013, the outstanding units in Antero Resources LLC are summarized as follows:

	<b>Units authorized and issued</b>
Class I units	107,281,058
Class A and B units	40,007,463
Class A and B profits units	19,726,873
	<u>167,015,394</u>

None of the three classes of outstanding units are entitled to current cash distributions or are convertible into indebtedness. The Company has no obligation to repurchase these units at the election of the unitholders.

In the event of a distribution from Antero Resources LLC, amounts available for distribution are distributed according to a formula set forth in the Company's limited liability company agreement that takes into account the relative priority of the various classes of units outstanding. In the event of a distribution due to the disposition of an individual Antero Entity, a portion of the proceeds is allocated to the employees of the Company based on a requisite return financial threshold. In general, distributions are made first to holders of the Class I units until they have received their investment amount and an 8% special allocation and then, as a group, to the holders of all classes of units together. The Class I units participate on a pro rata basis with the other classes of units in funds available for distributions in excess of the Class I unit investment and special allocation amounts.

At December 31, 2012 and March 31, 2013, the Class I units have an aggregate liquidation priority, including the special allocation of 8% per annum, of \$2.191 billion and \$2.234 billion, respectively.



**ANTERO RESOURCES LLC AND SUBSIDIARIES****Notes to Condensed Consolidated Financial Statements (Continued)****December 31, 2012 and March 31, 2013****(6) Financial Instruments**

The carrying values of trade receivables, trade payables, and the Credit Facility at December 31, 2012 and March 31, 2013 approximated market value. The carrying value of the Credit Facility at December 31, 2012 and March 31, 2013 approximated fair value because the variable interest rates are reflective of current market conditions. Based on Level 2 market data, the fair value of the Company's senior notes was approximately \$1.3 billion and \$1.5 billion at December 31, 2012 and March 31, 2013, respectively.

**(7) Asset Retirement Obligations**

The following is a reconciliation of the Company's asset retirement obligations for the three months ended March 31, 2013 (in thousands):

Asset retirement obligations—beginning of period	\$ 10,552
Obligations incurred	21
Accretion expense	264
Asset retirement obligations—end of period	<u>\$ 10,837</u>

**(8) Derivative Instruments and Risk Management Activities*****(a) Commodity Derivatives***

The Company periodically enters into natural gas derivative contracts with counterparties to hedge the price risk associated with a portion of its production. These derivatives are not held for trading purposes. To the extent that changes occur in the market prices of natural gas, the Company is exposed to market risk on these open contracts. This market risk exposure is generally offset by the change in market prices of natural gas recognized upon the ultimate sale of the natural gas produced.

For the three months ended March 31, 2012 and 2013, the Company was party to natural gas fixed price swaps. When actual commodity prices exceed the fixed price provided by the swap contracts, the Company pays the excess to the counterparty, and when actual commodity prices are below the contractually provided fixed price, the Company receives the difference from the counterparty. The Company's natural gas swaps have not been designated as hedges for accounting purposes; therefore, all gains and losses were recognized in income currently.

The Company has no collateral from any counterparties. All but one of our commodity derivative positions are with institutions that have a position in our Credit Facility and are secured by the collateral pledged on the Credit Facility and cross default provisions between the Credit Facility and the derivative instruments. At March 31, 2013, there were no past due receivables from or payables to any of our counterparties.

## ANTERO RESOURCES LLC AND SUBSIDIARIES

## Notes to Condensed Consolidated Financial Statements (Continued)

December 31, 2012 and March 31, 2013

## (8) Derivative Instruments and Risk Management Activities (Continued)

As of March 31, 2013, the Company's positions in fixed price natural gas and oil swaps from April 1, 2013 through December 31, 2018 are summarized in the following table.

	MMbtu/day	Bbls/day	Price
Year ending December 31, 2013:			
CGTAP	192,003	—	\$ 4.44
Dominion South	191,489	—	4.75
NYMEX-WTI	—	300	90.30
2013 Total	<u>383,492</u>	<u>300</u>	
Year ending December 31, 2014:			
CGLA	10,000		\$ 3.87
CGTAP	200,000		5.16
Dominion South	160,000		5.15
2014 Total	<u>370,000</u>		
Year ending December 31, 2015:			
CGLA	40,000		\$ 4.00
CGTAP	120,000		5.01
Dominion South	230,000		5.60
2015 Total	<u>390,000</u>		
Year ending December 31, 2016:			
CGLA	170,000		\$ 4.09
CGTAP	60,000		4.91
Dominion South	272,500		5.35
NYMEX	20,000		4.39
2016 Total	<u>522,500</u>		
Year ending December 31, 2017:			
CGLA	420,000		\$ 4.27
NYMEX	100,000		4.56
2017 Total	<u>520,000</u>		
Year ending December 31, 2018:			
NYMEX	<u>420,000</u>		\$ 4.79

ANTERO RESOURCES LLC AND SUBSIDIARIES

Notes to Condensed Consolidated Financial Statements (Continued)

December 31, 2012 and March 31, 2013

(8) Derivative Instruments and Risk Management Activities (Continued)

(b) Summary

The following is a summary of the fair values of our derivative instruments, which are not designated as hedges for accounting purposes and where such values are recorded in the consolidated balance sheets as of December 31, 2012 and March 31, 2013.

	December 31, 2012		March 31, 2013	
	Balance sheet location	Fair value (In thousands)	Balance sheet location	Fair value (In thousands)
Asset derivatives not designated as hedges for accounting purposes:				
Commodity contracts	Current assets	\$ 160,579	Current assets	\$ 89,751
Commodity contracts	Long-term assets	371,436	Long-term assets	329,575
Total asset derivatives		<u>532,015</u>		<u>419,326</u>
Liability derivatives not designated as hedges for accounting purposes:				
Commodity contracts	Current liabilities	—	Current liabilities	7,382
Net asset value of derivatives		<u>\$ 532,015</u>		<u>\$ 411,944</u>

The following is a summary of realized and unrealized gains (losses) on derivative instruments and where such values are recorded in the consolidated statements of operations for the three months ended March 31, 2012 and 2013 (in thousands):

	Statement of operations location	March 31	
		2012	2013
Realized gains on commodity contracts	Revenue	\$ 46,852	48,131
Unrealized gains (losses) on commodity contracts	Revenue	170,402	(120,072)
Realized gains on commodity contracts	Discontinued operations	33,227	—
Unrealized gains on commodity contracts	Discontinued operations	32,561	—
Total gains (losses) on commodity contracts, net		<u>\$ 283,042</u>	<u>(71,941)</u>

**ANTERO RESOURCES LLC AND SUBSIDIARIES****Notes to Condensed Consolidated Financial Statements (Continued)****December 31, 2012 and March 31, 2013****(8) Derivative Instruments and Risk Management Activities (Continued)**

The following table summarizes the valuation of investments and financial instruments by the fair value hierarchy described in note 1 at March 31, 2013:

<u>Description</u>	<u>Fair value measurements using</u>			<u>Total</u>
	<u>Quoted prices in active markets for identical assets (Level 1)</u>	<u>Significant other observable inputs (Level 2)</u>	<u>Significant unobservable inputs (Level 3)</u>	
Net derivatives asset:				
Fixed price commodity swaps	\$ —	411,944	—	411,944

**(9) Sale of Appalachian Gathering Assets**

On March 26, 2012, the Company closed the sale of a portion of its Marcellus Shale gathering system assets along with exclusive rights to gather the Company's gas for a 20-year period within an area of dedication (AOD) to a joint venture owned by Crestwood Midstream Partners and Crestwood Holdings Partners LLC (together "Crestwood") for \$375 million (and purchase price adjustments). The sale included approximately 25 miles of low pressure pipeline systems and gathering rights on 104,000 net acres held by the Company within a 250,000 acre AOD and had an effective date of January 1, 2012. Other third-party producers will also have access to the Crestwood system. During the first seven years of the contract, the Company is committed to deliver minimum volumes into the gathering systems, with certain carryback and carryforward adjustments for overages or deficiencies. The Company can earn up to an additional \$40 million of sale proceeds over a period of three years from the date of the sale if it meets certain volume thresholds. Crestwood is obligated to incur all future capital costs to build out gathering systems and compression facilities within the AOD to connect the Company's wells as it executes its drilling program and has assumed the various risks and rewards of the system build-out and operations. Because the Company has not retained the substantial risks and rewards of ownership associated with the gathering rights and systems transferred to Crestwood, it has recognized a gain on the sale of the gathering system and gathering rights of approximately \$291 million.

**(10) Contingencies**

In March 2011, the Company received orders for compliance from the U.S. Environmental Protection Agency relating to certain of our activities in West Virginia. The orders allege that certain of the Company's operations at several well sites are not in compliance with certain environmental regulations pertaining to unpermitted discharges of fill material into wetlands or waters that are potentially in violation of the Clean Water Act. The Company has responded to all pending orders and is actively cooperating with the relevant agencies. No fine or penalty relating to these matters has been proposed at this time, but the Company believes that these actions will result in monetary sanctions exceeding \$100,000. The Company is unable to estimate the total amount of such monetary sanctions or costs to remediate these locations in order to bring them into compliance with applicable environmental laws and regulations.

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Condensed Consolidated Financial Statements (Continued)**

**December 31, 2012 and March 31, 2013**

**(10) Contingencies (Continued)**

The Company has been named in separate lawsuits in Colorado, West Virginia, and Pennsylvania in which the plaintiffs have alleged that our oil and natural gas activities exposed them to hazardous substances and damaged their properties and their persons. The plaintiffs have requested unspecified damages and other injunctive or equitable relief. The Company denies any such allegations and intends to vigorously defend itself against these actions. The Company is unable to estimate the amount of monetary or other damages, if any, that might result from these claims.

The Company is also party to various other legal proceedings and claims in the ordinary course of its business. The Company believes certain of these matters will be covered by insurance and that the outcome of other matters will not have a material adverse effect on its consolidated financial position, results of operations, or liquidity.

**Report of Independent Registered Public Accounting Firm**

The Board of Directors and Members  
Antero Resources LLC and Subsidiaries:

We have audited the accompanying consolidated balance sheets of Antero Resources LLC and subsidiaries as of December 31, 2011 and 2012, and the related consolidated statements of operations and comprehensive income (loss), members' equity, and cash flows for each of the years in the three-year period ended December 31, 2012. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Antero Resources LLC and subsidiaries as of December 31, 2011 and 2012, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2012, in conformity with U.S. generally accepted accounting principles.

/s/ KPMG LLP

Denver, Colorado

March 15, 2013

## ANTERO RESOURCES LLC AND SUBSIDIARIES

## Consolidated Balance Sheets

December 31, 2011 and 2012

(In thousands)

	2011	2012
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 3,343	18,989
Accounts receivable—trade, net of allowance for doubtful accounts of \$182 and \$174 in 2011 and 2012, respectively	25,117	21,296
Notes receivable—short-term portion	7,000	4,555
Accrued revenue	35,986	46,669
Derivative instruments	248,550	160,579
Other	13,646	22,518
Total current assets	<u>333,642</u>	<u>274,606</u>
Property and equipment:		
Natural gas properties, at cost (successful efforts method):		
Unproved properties	834,255	1,243,237
Proved properties	2,497,306	1,689,132
Gathering systems and facilities	142,241	168,930
Other property and equipment	8,314	9,517
	<u>3,482,116</u>	<u>3,110,816</u>
Less accumulated depletion, depreciation, and amortization	<u>(601,702)</u>	<u>(173,343)</u>
Property and equipment, net	2,880,414	2,937,473
Derivative instruments	541,423	371,436
Notes receivable—long-term portion	5,111	2,667
Other assets, net	28,210	32,611
Total assets	<u>\$3,788,800</u>	<u>3,618,793</u>
<b>Liabilities and Equity</b>		
Current liabilities:		
Accounts payable	\$ 107,027	181,478
Accrued liabilities	37,955	61,161
Revenue distributions payable	34,768	46,037
Current portion of long-term debt	—	25,000
Deferred income tax liability	75,308	62,620
Total current liabilities	<u>255,058</u>	<u>376,296</u>
Long-term liabilities:		
Long-term debt	1,317,330	1,444,058
Deferred income tax liability	245,327	91,692
Other long-term liabilities	12,279	33,010
Total liabilities	<u>1,829,994</u>	<u>1,945,056</u>
Equity:		
Members' equity	1,460,947	1,460,947
Accumulated earnings	497,859	212,790
Total equity	<u>1,958,806</u>	<u>1,673,737</u>
Total liabilities and equity	<u>\$3,788,800</u>	<u>3,618,793</u>

See accompanying notes to consolidated financial statements.

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Consolidated Statements of Operations and Comprehensive Income (Loss)**

**Years ended December 31, 2010, 2011 and 2012**

**(In thousands)**

	2010	2011	2012
<b>Revenue:</b>			
Natural gas sales	\$ 47,392	195,116	259,743
Natural gas liquids sales	—	—	3,719
Oil sales	39	173	1,520
Realized and unrealized gains on commodity derivative instruments (including unrealized gains of \$62,536, \$446,120 and \$1,055 in 2010, 2011, and 2012, respectively)	77,599	496,064	179,546
Gain on sale of gathering system	—	—	291,190
<b>Total revenue</b>	<b>125,030</b>	<b>691,353</b>	<b>735,718</b>
<b>Operating expenses:</b>			
Lease operating expenses	1,158	4,608	6,243
Gathering, compression, and transportation	9,237	37,315	91,094
Production taxes	2,885	11,915	20,210
Exploration expenses	2,350	4,034	14,675
Impairment of unproved properties	6,076	4,664	12,070
Depletion, depreciation, and amortization	18,522	55,716	102,026
Accretion of asset retirement obligations	11	76	101
Expenses related to business acquisition	2,544	—	—
General and administrative	21,952	33,342	45,284
Loss on sale of assets	—	8,700	—
<b>Total operating expenses</b>	<b>64,735</b>	<b>160,370</b>	<b>291,703</b>
<b>Operating income</b>	<b>60,295</b>	<b>530,983</b>	<b>444,015</b>
<b>Other expense:</b>			
Interest expense	(56,463)	(74,404)	(97,510)
Realized and unrealized losses on interest derivative instruments, net (including unrealized gains of \$6,875 and \$4,212 in 2010 and 2011, respectively)	(2,677)	(94)	—
<b>Total other expense</b>	<b>(59,140)</b>	<b>(74,498)</b>	<b>(97,510)</b>
<b>Income from continuing operations before income taxes and discontinued operations</b>	<b>1,155</b>	<b>456,485</b>	<b>346,505</b>
Provision for income taxes	(939)	(185,297)	(121,229)
<b>Income from continuing operations</b>	<b>216</b>	<b>271,188</b>	<b>225,276</b>
<b>Discontinued operations:</b>			
Income (loss) from results of operations and sale of discontinued operations, net of income tax (expense) benefit of \$(29,070), \$(45,155), and \$272,553 in 2010, 2011, and 2012, respectively	228,412	121,490	(510,345)
<b>Net income (loss) and comprehensive income (loss) attributable to Antero equity owners</b>	<b>\$ 228,628</b>	<b>392,678</b>	<b>(285,069)</b>
<b>Pro forma information</b>			
<b>Pro forma earnings (loss) per common share—basic</b>			
Income from continuing operations	\$	\$	\$
Discontinued operations	\$	\$	\$
<b>Net income</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
<b>Pro forma earnings (loss) per common share—diluted</b>			
Income from continuing operations	\$	\$	\$
Discontinued operations	\$	\$	\$
<b>Net income</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
<b>Pro forma weighted average number of shares outstanding:</b>			
Basic			
Diluted			

See accompanying notes to consolidated financial statements.



**ANTERO RESOURCES LLC AND SUBSIDIARIES****Consolidated Statements of Equity****Years ended December 31, 2010, 2011, and 2012****(In thousands)**

	<u>Members' equity</u>	<u>Accumulated deficit</u>	<u>Total Antero equity</u>	<u>Noncontrolling interest</u>	<u>Total equity</u>
Balances, December 31, 2009	\$ 1,392,833	(123,447)	1,269,386	29,721	1,299,107
Issuance of member units in business acquisition	97,000	—	97,000	—	97,000
Equity issuance costs	(27)	—	(27)	—	(27)
Sale of midstream subsidiary	—	—	—	(31,285)	(31,285)
Net income and comprehensive income	—	228,628	228,628	1,564	230,192
Balances, December 31, 2010	1,489,806	105,181	1,594,987	—	1,594,987
Distribution to members	(28,859)	—	(28,859)	—	(28,859)
Net income and comprehensive income	—	392,678	392,678	—	392,678
Balances, December 31, 2011	1,460,947	497,859	1,958,806	—	1,958,806
Net income (loss) and comprehensive income (loss)	—	(285,069)	(285,069)	—	(285,069)
Balances, December 31, 2012	<u>\$ 1,460,947</u>	<u>212,790</u>	<u>1,673,737</u>	<u>—</u>	<u>1,673,737</u>

See accompanying notes to consolidated financial statements.

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Consolidated Statements of Cash Flows**

**Years ended December 31, 2010, 2011, and 2012**

(In thousands)

	2010	2011	2012
<b>Cash flows from operating activities:</b>			
Net income (loss)	\$ 228,628	392,678	(285,069)
Adjustment to reconcile net income (loss) to net cash provided by operating activities:			
Depletion, depreciation, amortization, and depletion	18,533	55,792	102,127
Impairment of unproved properties	6,076	4,664	12,070
Unrealized gains on derivative instruments, net	(69,411)	(450,332)	(1,055)
Deferred income tax expense	939	185,297	106,229
(Gain) loss on sale of assets	—	8,700	(291,190)
Loss (gain) on sale of discontinued operations	(147,559)	—	795,945
Depletion, depreciation, amortization, impairment of unproved properties, and dry hole expense—discontinued operations	164,993	126,041	90,096
Unrealized (gains) losses on derivative instruments, net—discontinued operations	(108,035)	(113,476)	45,808
Deferred income tax expense (benefit)—discontinued operations	29,070	45,155	(272,553)
Other	5,255	3,479	4,960
Changes in assets and liabilities:			
Accounts receivable	(2,306)	3,854	5,511
Accrued revenue	(7,408)	(11,118)	(10,683)
Other current assets	261	(4,528)	(8,882)
Accounts payable	9,779	(1,875)	(2,117)
Accrued liabilities	(2,771)	17,124	14,790
Revenue distributions payable	1,747	4,852	11,268
Other	—	—	15,000
Net cash provided by operating activities	<u>127,791</u>	<u>266,307</u>	<u>332,255</u>
<b>Cash flows from investing activities:</b>			
Additions to proved properties	—	(105,405)	(10,254)
Additions to unproved properties	(41,277)	(195,131)	(687,403)
Drilling costs	(299,926)	(527,710)	(839,151)
Additions to gathering systems and facilities	(47,124)	(72,837)	(142,294)
Additions to other property and equipment	(2,647)	(2,339)	(3,447)
(Increase) decrease in notes receivable	(2,000)	(10,111)	4,889
Increase in other assets	(556)	(3,095)	(3,707)
Proceeds from asset sales	258,918	15,379	1,217,876
Net assets of business acquired, net of cash of \$170	(96,060)	—	—
Net cash used in investing activities	<u>(230,672)</u>	<u>(901,249)</u>	<u>(463,491)</u>
<b>Cash flows from financing activities:</b>			
Issuance of senior notes	156,000	400,000	300,000
Borrowings (repayments) on bank credit facility, net	(42,080)	265,000	(148,000)
Payments of deferred financing costs	(10,459)	(6,691)	(5,926)
Distribution to members	—	(28,859)	—
Other	(2,261)	(153)	808
Net cash provided by financing activities	<u>101,200</u>	<u>629,297</u>	<u>146,882</u>
Net increase (decrease) in cash and cash equivalents	(1,681)	(5,645)	15,646
Cash and cash equivalents, beginning of period	10,669	8,988	3,343
Cash and cash equivalents, end of period	<u>\$ 8,988</u>	<u>3,343</u>	<u>18,989</u>
<b>Supplemental disclosure of cash flow information:</b>			
Cash paid during the period for interest	\$ 52,326	59,107	90,122
<b>Supplemental disclosure of noncash investing activities:</b>			
Changes in accounts payable for additions to properties, gathering systems and facilities	\$ 32,028	26,465	72,881

See accompanying notes to consolidated financial statements.

## ANTERO RESOURCES LLC AND SUBSIDIARIES

### Notes to Consolidated Financial Statements

December 31, 2010, 2011, and 2012

#### (1) Organization

##### *Business and Organization*

Antero Resources LLC, a limited liability company, and its consolidated operating subsidiaries (collectively referred to as the Company, we, or our) are engaged in the exploration for and the production of natural gas, natural gas liquids (NGLs), and oil onshore in the United States in unconventional reservoirs, which can generally be characterized as fractured shales and tight sand formations. Our properties are primarily located in the Appalachian Basin in West Virginia, Ohio, and Pennsylvania. During 2012 we sold our Oklahoma Arkoma Basin properties and our Colorado Piceance Basin properties. We also have certain midstream gathering and pipeline operations which are ancillary to our interests in producing properties. Our corporate headquarters are in Denver, Colorado.

Our consolidated financial statements as of December 31, 2012 include the accounts of Antero Resources LLC, and its directly and indirectly owned subsidiaries. The subsidiaries include Antero Resources Appalachian Corporation and its wholly owned subsidiaries, Antero Resources Arkoma LLC (Antero Arkoma), Antero Resources Piceance LLC (Antero Piceance), Antero Resources Pipeline LLC (Antero Pipeline), Antero Resources Bluestone LLC, and Antero Resources Finance Corporation (Antero Finance) (collectively referred to as the Antero Entities). Subsequent to December 31, 2012 the Antero Arkoma, Antero Piceance, and Antero Pipeline LLCs were merged into Antero Resources Appalachian Corporation.

#### (2) Summary of Significant Accounting Policies

##### *(a) Basis of Presentation*

The accompanying consolidated financial statements include the accounts of Antero Resources LLC and its subsidiaries. All significant intercompany accounts and transactions have been eliminated.

As of the date these financial statements were filed with the Securities and Exchange Commission, the Company completed its evaluation of potential subsequent events for disclosure and no items other than the event described in Note 7 (d) requiring disclosure were identified.

##### *(b) Use of Estimates*

The preparation of consolidated financial statements in conformity with generally accepted accounting principles in the United States requires management to make estimates and assumptions that affect the reported assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Changes in facts and circumstances or discovery of new information may result in revised estimates, and actual results could differ from those estimates.

The Company's consolidated financial statements are based on a number of significant estimates including estimates of gas and oil reserve quantities, which are the basis for the calculation of depreciation, depletion, amortization, present value of cash flows from reserves, and impairment of oil and gas properties. Reserve estimates by their nature are inherently imprecise.

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Consolidated Financial Statements (Continued)**

**December 31, 2010, 2011, and 2012**

**(2) Summary of Significant Accounting Policies (Continued)**

***(c) Risks and Uncertainties***

Historically, the market for natural gas, NGLs, and oil has experienced significant price fluctuations. Prices for natural gas have been particularly volatile in recent years. The price fluctuations can result from variations in weather, levels of production in the region, availability of transportation capacity to other regions of the country, and various other factors. Increases or decreases in prices received could have a significant impact on the Company's future results of operations.

***(d) Cash and Cash Equivalents***

The Company considers all liquid investments purchased with an initial maturity of three months or less to be cash equivalents. The carrying value of cash and cash equivalents approximates fair value due to the short-term nature of these instruments.

***(e) Oil and Gas Properties***

The Company accounts for its natural gas and crude oil exploration and development activities under the successful efforts method of accounting. Under the successful efforts method, costs of productive wells, development dry holes, and undeveloped leases are capitalized. Oil and gas lease acquisition costs are also capitalized. Exploration costs, including personnel and other internal costs, geological and geophysical expenses, and delay rentals for gas and oil leases, are charged to expense as incurred. Exploratory drilling costs are initially capitalized, but charged to expense if and when the well is determined not to have found reserves in commercial quantities. The Company reviews exploration costs related to wells-in-progress at the end of each quarter and makes a determination based on known results of drilling at that time whether the costs should continue to be capitalized pending further well testing and results or charged to expense. The sale of a partial interest in a proved property is accounted for as a cost recovery, and no gain or loss is recognized as long as this treatment does not significantly affect the units-of-production amortization rate. A gain or loss is recognized for all other sales of producing properties.

Unproved properties with significant acquisition costs are assessed for impairment on a property-by-property basis, and any impairment in value is charged to expense. Impairment is assessed based on remaining lease terms, drilling results, reservoir performance, commodity price outlooks, and future plans to develop acreage. Other unproved properties are assessed for impairment on an aggregate basis. Unproved properties and the related costs are transferred to proved properties when reserves are discovered on or otherwise attributed to the property. Proceeds from sales of partial interests in unproved properties are accounted for as a recovery of cost without recognizing any gain or loss until the cost has been recovered. Impairment of unproved properties (including discontinued operations) for leases which have expired or are expected to expire was \$35.9 million, \$11.1 million, and \$13.0 million for the years ended December 31, 2010, 2011, and 2012, respectively.

The Company reviews its proved oil and gas properties for impairment whenever events and circumstances indicate that the carrying value of the properties may not be recoverable. When determining whether impairment has occurred, the Company estimates the expected future cash flows of its oil and gas properties and compares such future cash flows to the carrying amount of the properties to determine if the carrying amount is recoverable. If the carrying amount exceeds the

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Consolidated Financial Statements (Continued)**

**December 31, 2010, 2011, and 2012**

**(2) Summary of Significant Accounting Policies (Continued)**

estimated undiscounted future cash flows, the Company reduces the carrying amount of the properties to their estimated fair value. The factors used to determine fair value include estimates of proved reserves, future commodity prices, cash flow from commodity hedges, future production estimates, anticipated capital expenditures, and a commensurate discount rate. There were no impairments of proved natural gas properties during the years ended December 31, 2010, 2011, and 2012.

At December 31, 2012, the Company did not have significant capitalized costs related to exploratory wells-in-progress which were pending determination of proved reserves. The Company had no significant costs which have been deferred for longer than one year pending proved reserves at December 31, 2012.

The provision for depreciation, depletion, and amortization of oil and gas properties (including discontinued operations) is calculated on a geological reservoir basis using the units-of-production method. Depreciation, depletion, and amortization expense for oil and gas properties was \$124.3 million, \$164.0 million, and \$181.7 million for the years ended December 31, 2010, 2011, and 2012, respectively.

***(f) Inventories***

Inventories consist of pipe and well equipment, and are stated at the lower of cost or market. Cost is determined using the first-in, first-out (FIFO) method.

***(g) Gathering Systems and Facilities***

Gathering systems and compressors are depreciated using the straight-line method over their estimated useful life of 20 years. Expenditures for installation, major additions, and improvements are capitalized, and minor replacements, maintenance, and repairs are charged to expenses as incurred. For the years ended December 31, 2010, 2011, and 2012, depreciation expense (including discontinued operations) for gathering systems and processing facilities was \$8.8 million, \$5.5 million, and \$7.4 million, respectively. A gain or loss is recognized upon the sale or disposal of property and equipment.

***(h) Impairment of Long-Lived Assets Other than Oil and Gas Properties***

The Company evaluates its long-lived assets other than natural gas properties for impairment when events or changes in circumstances indicate that the related carrying amount of the assets may not be recoverable. Generally, the basis for making such assessments is undiscounted future cash flow projections for the unit being assessed. If the carrying value amounts of the assets are deemed to be not recoverable, the carrying amount is reduced to the estimated fair value, which is based on discounted future cash flows or other techniques, as appropriate. No impairments for such assets have been recorded through December 31, 2012.

***(i) Other Property and Equipment***

Other property and equipment is depreciated using the straight-line method over estimated useful lives ranging from three to five years. For the years ended December 31, 2010, 2011, and 2012,

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Consolidated Financial Statements (Continued)**

**December 31, 2010, 2011, and 2012**

**(2) Summary of Significant Accounting Policies (Continued)**

depreciation expense for other property and equipment was \$0.8 million, \$1.0 million, and \$1.7 million, respectively. A gain or loss is recognized upon the sale or disposal of property and equipment.

***(j) Deferred Financing Costs***

Deferred financing costs represent loan origination fees, initial purchasers' discounts, and other borrowing costs and are included in noncurrent other assets on the consolidated balance sheets. These costs are being amortized over the term of the related debt using the effective interest method. The Company charges interest expense for deferred financing costs remaining for debt facilities that have been retired prior to their maturity date. At December 31, 2012, the Company had \$28.1 million of unamortized deferred financing costs included in other long-term assets. The amounts amortized and the write-off of previously deferred debt issuance costs were \$4.1 million, \$3.8 million, and \$5.2 million for the years ended December 31, 2010, 2011, and 2012, respectively.

***(k) Derivative Financial Instruments***

In order to manage its exposure to oil and gas price volatility, the Company enters into derivative transactions from time to time, including commodity swap agreements, collar agreements, and other similar agreements relating to natural gas expected to be produced. From time to time, the Company also enters into derivative contracts to mitigate the effects of interest rate fluctuations. To the extent legal right of offset with a counterparty exists, the Company reports derivative assets and liabilities on a net basis. The Company has exposure to credit risk to the extent the counterparty is unable to satisfy its settlement obligation. The Company actively monitors the creditworthiness of counterparties and assesses the impact, if any, on its derivative position.

The Company records derivative instruments on the consolidated balance sheets as either an asset or liability measured at fair value and records changes in the fair value of derivatives in current earnings as they occur. Changes in the fair value of commodity derivatives are classified as revenues, and changes in the fair value of interest rate derivatives are classified as other income (expense). Cash flows from the termination of commodity derivatives in conjunction with sales of oil and gas assets are included in the investing section of the statement of cash flows.

***(l) Asset Retirement Obligations***

The Company is obligated to dispose of certain long-lived assets upon their abandonment. The Company's asset retirement obligations (ARO) relate primarily to its obligation to plug and abandon oil and gas wells at the end of their life. The ARO is recorded at its estimated fair value, measured by reference to the expected future cash outflows required to satisfy the retirement obligation discounted at the Company's credit-adjusted, risk-free interest rate. Revisions to estimated ARO can result from changes in retirement cost estimates, revisions to estimated inflation rates, and changes in the estimated timing of abandonment. The fair value of the liability is added to the carrying amount of the associated asset, and this additional carrying amount is depreciated over the life of the asset. The liability is accreted at the end of each period through charges to operating expense. If the obligation is settled for an amount other than the carrying amount of the liability, we will recognize a gain or loss on settlement.

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Consolidated Financial Statements (Continued)**

**December 31, 2010, 2011, and 2012**

**(2) Summary of Significant Accounting Policies (Continued)**

The Company delivers natural gas through its gathering assets and may become obligated by regulatory requirements to remove certain facilities or perform other remediation upon retirement of these assets. However, the Company is not able to reasonably determine the fair value of the ARO since future dismantlement and removal dates are indeterminate. The Company does not have access to adequate forecasts that predict the timing of expected production for existing reserves on those fields in which the Company operates. In the absence of such information, the Company is not able to make a reasonable estimate of when future dismantlement and removal dates will occur and will continue to monitor regulatory requirements to remove its gathering assets.

***(m) Environmental Liabilities***

Environmental expenditures that relate to an existing condition caused by past operations and that do not contribute to current or future revenue generation are expensed as incurred. Liabilities are accrued when environmental assessments and/or clean up is probable, and the costs can be reasonably estimated. These liabilities are adjusted as additional information becomes available or circumstances change. As of December 31, 2011 and 2012, the Company has not accrued a material amount for any environmental liabilities nor has it been fined or cited for any environmental violations that could have a material adverse effect on future capital expenditures or operating results of the Company.

***(n) Natural Gas, NGL and Oil Revenues***

Sales of natural gas, NGLs, and crude oil are recognized when the products are delivered to the purchaser and title transfers to the purchaser. Payment is generally received one month months after the sale has occurred. Variances between estimated sales and actual amounts received are recorded in the month payment is received and are not material. The Company recognizes natural gas revenues based on its entitlement share of natural gas that is produced based on its working interests in the properties. The Company records a receivable (payable) to the extent it receives less (more) than its proportionate share natural gas revenues. At December 31, 2011 and 2012, the Company had no significant imbalance positions.

***(o) Concentrations of Credit Risk***

The Company's revenues are derived principally from uncollateralized sales to purchasers in the oil and gas industry. The concentration of credit risk in a single industry affects the Company's overall exposure to credit risk because purchasers may be similarly affected by changes in economic and other conditions. The Company has not experienced significant credit losses on its receivables.

**ANTERO RESOURCES LLC AND SUBSIDIARIES****Notes to Consolidated Financial Statements (Continued)****December 31, 2010, 2011, and 2012****(2) Summary of Significant Accounting Policies (Continued)**

The Company's sales to major customers (purchases in excess of 10% of total sales) for the years ended December 31, 2010, 2011, and 2012 are as follows (including sales in discontinued operations):

	<u>2010</u>	<u>2011</u>	<u>2012</u>
Company A	23%	28%	23%
Company B	13	17	13
Company C	11	12	10
All others	53	43	54
	<u>100%</u>	<u>100%</u>	<u>100%</u>

Although a substantial portion of production is purchased by these major customers, we do not believe the loss of any one or several customers would have a material adverse effect on our business, as other customers or markets would be accessible to us.

The Company is also exposed to credit risk on its commodity derivative portfolio. Any default by the counterparties to these derivative contracts when they become due would have a material adverse effect on our financial condition and results of operations. The fair value of our commodity derivative contracts of approximately \$532 million at December 31, 2012 includes the following values by bank counterparty: JP Morgan—\$94 million; BNP Paribas—\$124 million; Credit Suisse—\$150 million; Wells Fargo—\$86 million; Barclays—\$57 million; Deutsche Bank—\$11 million; and Union Bank—\$4 million. Additionally, contracts with Dominion Field Services account for \$6 million of the fair value. The estimated fair value of our commodity derivative assets has been risk adjusted using a discount rate based upon the respective published credit default swap rates at December 31, 2012 for each of the European and American banks. We believe that all of these institutions currently are acceptable credit risks.

The Company, at times, may have cash in banks in excess of federally insured amounts.

***(p) Income Taxes***

Antero Resources LLC and each of its operating subsidiaries file separate federal and state income tax returns. Antero Resources LLC is a partnership for income tax purposes and therefore is not subject to federal or state income taxes. The tax on the income of Antero Resources LLC is borne by the individual members through the allocation of taxable income.

The Company's operating subsidiaries recognize deferred tax assets and liabilities for temporary differences resulting from net operating loss carryforwards for income tax purposes and the differences between the financial statement and tax basis of assets and liabilities. The effect of changes in the tax laws or tax rates is recognized in income in the period such changes are enacted. Deferred tax assets are reduced by a valuation allowance, when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized.

Unrecognized tax benefits represent potential future tax obligations for uncertain tax positions taken on previously filed tax returns that may not ultimately be sustained. The Company recognizes interest expense related to unrecognized tax benefits in interest expense and fines and penalties as income tax expense. The tax years 2009 through 2012 remain open to examination by the U.S. Internal



**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Consolidated Financial Statements (Continued)**

**December 31, 2010, 2011, and 2012**

**(2) Summary of Significant Accounting Policies (Continued)**

Revenue Service. The Company files tax returns with various state taxing authorities which remain open to examination for tax years 2008 through 2012.

**(q) Fair Value Measures**

FASB ASC Topic 820, *Fair Value Measurements and Disclosures*, clarifies the definition of fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurements. This guidance also relates to all nonfinancial assets and liabilities that are not recognized or disclosed on a recurring basis (e.g., those measured at fair value in a business combination, the initial recognition of asset retirement obligations, and impairments of proved oil and gas properties, and other long-lived assets). The fair value is the price that the Company estimates would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. A fair value hierarchy is used to prioritize input to valuation techniques used to estimate fair value. An asset or liability subject to the fair value requirements is categorized within the hierarchy based on the lowest level of input that is significant to the fair value measurement. The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires judgment and considers factors specific to the asset or liability. The highest priority (Level 1) is given to unadjusted quoted market prices in active markets for identical assets or liabilities, and the lowest priority (Level 3) is given to unobservable inputs. Level 2 inputs are data, other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Instruments which are valued using Level 2 inputs include nonexchange traded derivatives such as over-the-counter commodity price swaps, basis swaps, and interest rate swaps. Valuation models used to measure fair value of these instruments consider various Level 2 inputs including (i) quoted forward prices for commodities, (ii) time value, (iii) quoted forward interest rates, (iv) current market prices and contractual prices for the underlying instruments, (v) risk of nonperformance by the Company and the counterparty, and (vi) other relevant economic measures. The Company utilizes its counterparties to assess the reasonableness of its prices and valuation techniques. To the extent a legal right of offset with a counterparty exists, the derivative assets and liabilities are reported on a net basis.

**(r) Industry Segment and Geographic Information**

We have evaluated how the Company is organized and managed and have identified one operating segment—the exploration and production of oil, natural gas, and natural gas liquids. We consider our gathering, processing, and marketing functions as ancillary to our oil and gas producing activities. All of our assets are located in the United States and all of our revenues are attributable to customers located in the United States.

**(s) Guarantees**

In November 2009 and January 2010, an indirect wholly owned finance subsidiary of Antero Resources LLC, Antero Finance, issued \$375 million and \$150 million, respectively, of 9.375% senior notes due December 1, 2017. In August 2011, Antero Finance issued \$400 million of 7.25% senior notes due August 1, 2019. In November 2012 and February 2013, Antero Finance issued \$300 million and \$225 million of 6.00% senior notes due December 1, 2020. For purposes of this footnote, we

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Consolidated Financial Statements (Continued)**

**December 31, 2010, 2011, and 2012**

**(2) Summary of Significant Accounting Policies (Continued)**

collectively refer to the 2017 senior notes, the 2019 senior notes and the 2020 senior notes as the "senior notes."

Antero Resources LLC, as the parent company (for purposes of this footnote only, the Parent Company), has no independent assets or operations. Antero Finance is a 100% indirectly owned finance subsidiary of Parent Company. The senior notes are each guaranteed on a senior unsecured basis by Parent Company and all of Parent Company's wholly owned subsidiaries (other than Antero Finance) and certain of its future restricted subsidiaries. The guarantees are full and unconditional and joint and several. The guarantor subsidiaries may be released from those guarantees upon the occurrence of certain events, including (i) the designation of that subsidiary guarantor as an unrestricted subsidiary; (ii) the release or discharge of any guarantee or indebtedness that resulted in the creation of the guarantee of the senior notes by such subsidiary guarantor; or (iii) the sale or other disposition, including the sale of substantially all of the assets, of that subsidiary guarantor. There are no significant restrictions on Antero Finance's ability to obtain funds from the Parent Company or the subsidiary guarantors by dividend or loan, except those imposed by applicable law. However, the indentures governing the senior notes and the Credit Facility agreement contain significant restrictions on the ability of Antero Finance or the subsidiary guarantors to make distributions to the Parent Company. Finally, the Parent Company's wholly owned subsidiaries do not have restricted assets that exceed 25% of net assets as of the most recent fiscal year end that may not be transferred to the Parent Company in the form of loans, advances or cash dividends by the subsidiaries without the consent of a third party.

**(3) Sale of Piceance and Arkoma Properties—Discontinued Operations**

On December 21, 2012 the Company completed the sale of its Piceance Basin assets. Proceeds from the sale of \$316 million represent the purchase price of \$325 million, adjusted for expenses of the sale and estimated income, expenses, and capital costs related to the Piceance Basin properties from the October 1, 2012 effective date of the sale through December 21, 2012. The Company had a loss of \$364 million on the sale of the Piceance Basin assets. The purchaser also assumed all of the Company's Rocky Mountain firm transportation obligations. Because of the sale of the Piceance Basin assets, the Company also liquidated its hedge positions related to the Piceance Basin and realized additional proceeds from these transactions of approximately \$100 million.

On June 29, 2012 the Company completed its sale of its Arkoma Basin assets and the commodity hedges associated with the Arkoma assets. Proceeds from the sale of \$427 million represent the purchase price of \$445 million adjusted for expenses of the sale and estimated income, expenses, and capital costs from the effective date of the sale through the closing date of June 29, 2012. The Company had a loss of \$432 million on the sale of the Arkoma Basin assets. The Company's Arkoma Basin midstream operations, which were sold on November 5, 2010, are also included in discontinued operations through the date of the sale. The Company realized a gain in 2010 of \$148 million on the sale of those midstream operations.

## ANTERO RESOURCES LLC AND SUBSIDIARIES

## Notes to Consolidated Financial Statements (Continued)

December 31, 2010, 2011, and 2012

**(3) Sale of Piceance and Arkoma Properties—Discontinued Operations (Continued)**

Results of operations and the loss on the sale of the Piceance Basin and Arkoma Basin assets are shown as discontinued operations on the accompanying Consolidated Statement of Operations and Comprehensive Income (Loss) and are comprised of the following (in thousands):

	Year ended December 31		
	2010	2011	2012
Sales of oil, natural gas, and natural gas liquids	\$ 159,031	196,705	125,396
Realized gains on commodity derivative instruments	58,650	66,654	92,166
Unrealized gains (losses) on commodity derivative instruments	108,035	113,476	(45,808)
Gas gathering and processing revenue	20,554	—	—
Gain on sale of midstream assets	147,559	—	—
Total revenues	493,829	376,835	171,754
Lease operating expenses	24,353	26,037	19,901
Gathering, compression, and transportation	36,572	50,453	45,089
Production taxes	5,892	6,307	2,967
Exploration expenses	22,444	5,842	664
Impairment of unproved properties	29,783	6,387	962
Depletion, depreciation, and amortization	115,433	114,805	88,720
Accretion of asset retirement obligations	306	359	404
Loss on sale of assets	—	—	795,945
Total expenses	234,783	210,190	954,652
Income (loss) from discontinued operations before income taxes	259,046	166,645	(782,898)
Income tax (expense) benefit	(29,070)	(45,155)	272,553
Net income (loss)	229,976	121,490	(510,345)
Noncontrolling interest in net income of consolidated subsidiary	(1,564)	—	—
Net income (loss) from discontinued operations attributable to Antero equity owners	\$ 228,412	121,490	(510,345)

**(4) Sale of Appalachian Gathering Assets**

On March 26, 2012, the Company closed the sale of a portion of its Marcellus Shale gathering system assets along with exclusive rights to gather the Company's gas for a 20-year period within an area of dedication (AOD) to a joint venture owned by Crestwood Midstream Partners and Crestwood Holdings Partners LLC (together Crestwood) for \$375 million (subject to customary purchase price adjustments). The sale included approximately 25 miles of low pressure pipeline systems and gathering rights on 104,000 net acres held by the Company within a 250,000 acre AOD and had an effective date of January 1, 2012. Other third-party producers will also have access to the Crestwood system. During the first seven years of the contract, the Company is committed to deliver minimum annual volumes into the gathering systems, with certain carryback and carryforward adjustments for overages or deficiencies. The Company can earn up to an additional \$40 million of sale proceeds over the next three years if it meets certain volume thresholds. Crestwood is obligated to incur all future capital costs to build out gathering systems and compression facilities within the AOD to connect the Company's

**ANTERO RESOURCES LLC AND SUBSIDIARIES****Notes to Consolidated Financial Statements (Continued)****December 31, 2010, 2011, and 2012****(4) Sale of Appalachian Gathering Assets (Continued)**

wells as it executes its drilling program and has assumed the various risks and rewards of the system build-out and operations. Because the Company has not retained the substantial risks and rewards of ownership associated with the gathering rights and systems transferred to Crestwood, it has recognized a gain on the sale of the gathering system and gathering rights of approximately \$291 million.

**(5) Bluestone Acquisition**

On December 1, 2010, the Company, through a newly formed subsidiary of Antero Appalachian, Antero Resources Bluestone LLC, acquired 100% of the interests in Bluestone Energy Partners (BEP), a general partnership which owned approximately 96 producing wells and 37,250 acres of unproved leaseholds in the Appalachian Basin.

The following table summarizes the consideration paid for the BEP partnership interests and the amounts of the assets acquired and liabilities assumed (in millions).

<b>Consideration:</b>	
Cash	\$ 96.2
I-5 and B-6 units (3,814,392 each) in Antero Resources LLC	97.0
Total fair value of consideration transferred	<u>\$ 193.2</u>
Acquisition related costs (included in operating expenses in the Company's statement of operations for the year ended December 31, 2011)	\$ 2.5
Fair values of identifiable assets acquired and liabilities assumed:	
Current assets	\$ 17.2
Oil and gas properties:	
Producing properties	50.7
Undeveloped leases	206.3
Other	4.3
Other long-term assets	9.3
Current liabilities	(7.0)
Long term liabilities	(26.2)
Deferred tax liabilities	(61.4)
Net assets acquired	<u>\$ 193.2</u>

The fair value of property and equipment and other long-term assets was determined using Level 3 inputs. Deferred tax liabilities were calculated by applying the estimated effective tax rate to the difference between the fair value of the assets acquired and their tax basis. The Company's I-5 and B-6 units, representing additional membership interests issued as part of the consideration, were recorded based on their estimated fair value of \$97.0 million on the acquisition date, using Level 3 inputs. There was no contingent consideration given as part of the purchase price.

**(6) Notes Receivable**

At December 31, 2011 and 2012 the Company had notes receivable from a drilling contractor of \$12.1 million and \$7.2 million, respectively. The notes result from the Company's advances to the drilling contractor to construct drilling rigs to be used by the contractor to fulfill long-term drilling

## ANTERO RESOURCES LLC AND SUBSIDIARIES

## Notes to Consolidated Financial Statements (Continued)

December 31, 2010, 2011, and 2012

**(6) Notes Receivable (Continued)**

contracts with the Company. The notes are noninterest bearing and are repayable over the term of the service agreements with the drilling contractor.

**(7) Long-term Debt**

The Company's had long-term debt as follows at December 31, 2011 and 2012 (in thousands):

	<u>2011</u>	<u>2012</u>
Bank credit facility (a)	\$ 365,000	217,000
9.375% senior notes due 2017 (b)	525,000	525,000
7.25% senior notes due 2019 (c)	400,000	400,000
6.00% senior notes due 2020 (d)	—	300,000
9.00% senior note due 2013 (e)	25,000	25,000
Net unamortized premium	2,330	2,058
	<u>1,317,330</u>	<u>1,469,058</u>
Less amounts due within one year	—	25,000
	<u>\$ 1,317,330</u>	<u>1,444,058</u>

**(a) Bank Credit Facility**

The Company has a senior secured revolving bank credit facility (the Credit Facility) with a consortium of bank lenders. The maximum amount of the Credit Facility is \$2.5 billion. Borrowings under the Credit Facility are subject to borrowing base limitations based on the collateral value of our proved properties and commodity hedge positions and are subject to regular semiannual redeterminations. The next redetermination of the borrowing base is scheduled to occur in May 2013. After giving effect to the issuance of the 6.00% senior notes due 2020 in November 2012 and February 2013, the borrowing base was \$1.22 billion and lender commitments totaled \$700 million. Lender commitments can be increased to the full \$1.22 billion borrowing base upon approval of the lending bank group. The maturity date of the Credit Facility is May 12, 2016.

The Credit Facility is secured by mortgages on substantially all of the Company's properties and guarantees from the Company's operating subsidiaries. The Credit Facility contains certain covenants, including restrictions on indebtedness and dividends, and requirements with respect to working capital and interest coverage ratios. Interest is payable at a variable rate based on LIBOR or the prime rate based on the Company's election at the time of borrowing. The Company was in compliance with all of the financial debt covenants under the Credit Facility as of December 31, 2011 and 2012.

As of December 31, 2012, the Company had an outstanding balance under the Credit Facility of \$217 million, with a weighted average interest rate of 1.91%, and outstanding letters of credit of approximately \$43 million. As of December 31, 2011, the Company had an outstanding balance under the Credit Facility of \$365 million, with a weighted average interest rate of 2.12%, and outstanding letters of credit of approximately \$21 million. Commitment fees on the unused portion of the Credit Facility are due quarterly at rates ranging from 0.375% to 0.50% of the unused facility based on utilization.

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Consolidated Financial Statements (Continued)**

**December 31, 2010, 2011, and 2012**

**(7) Long-term Debt (Continued)**

***(b) 9.375% Senior Notes Due 2017***

On November 17, 2009, an indirect wholly owned finance subsidiary of Antero Resources LLC, Antero Finance, issued \$375 million of 9.375% senior notes due December 1, 2017 at a discount of \$2.6 million. In January 2010, the Company issued an additional \$150 million of the same series of 9.375% senior notes at a premium of \$6.0 million. The notes are unsecured and effectively subordinated to the Company's Credit Facility to the extent of the value of the collateral securing the Credit Facility. The notes are guaranteed on a full and unconditional basis and joint and severally by Antero Resources LLC, all of its wholly owned subsidiaries (other than Antero Finance), and certain of its future restricted subsidiaries. Antero Resources LLC has no independent assets or operations. Interest on the notes is payable on June 1 and December 1 of each year. Antero Finance may redeem all or part of the notes at any time on or after December 1, 2013 at redemption prices ranging from 104.688% on or after December 1, 2013 to 100.00% on or after December 1, 2015. At any time prior to December 1, 2013, Antero Finance may also redeem the notes, in whole or in part, at a price equal to 100% of the principal amount of the notes plus a "make-whole" premium. If Antero Resources LLC undergoes a change of control, Antero Finance may be required to offer to purchase notes from the holders. Antero Resources LLC, the stand-alone parent entity, has insignificant independent assets and no operations. There are no restrictions on the Company's ability to obtain cash dividends or other distributions of funds from its subsidiaries, except those imposed by applicable law.

***(c) 7.25% Senior Notes Due 2019***

On August 1, 2011, Antero Finance issued \$400 million of 7.25% senior notes due August 1, 2019 at par. The notes are unsecured and effectively subordinated to the Company's Credit Facility to the extent of the value of the collateral securing the Credit Facility. The notes rank pari passu to the existing 9.375% senior notes. The notes are guaranteed on a senior unsecured basis by Antero Resources LLC, all of its wholly owned subsidiaries (other than Antero Finance), and certain of its future restricted subsidiaries. Interest on the notes is payable on August 1 and February 1 of each year. Antero Finance may redeem all or part of the notes at any time on or after August 1, 2014 at redemption prices ranging from 105.438% on or after August 1, 2014 to 100.00% on or after August 1, 2017. In addition, on or before August 1, 2014, Antero Finance may redeem up to 35% of the aggregate principal amount of the notes with the net cash proceeds of certain equity offerings, if certain conditions are met, at a redemption price of 107.25% of the principal amount of the notes, plus accrued interest. At any time prior to August 1, 2014, Antero Finance may redeem the notes, in whole or in part, at a price equal to 100% of the principal amount of the notes plus a "make-whole" premium and accrued interest. If Antero Resources LLC undergoes a change of control, the note holders will have the right to require Antero Finance to repurchase all or a portion of the notes at a price equal to 101% of the principal amount of the notes, plus accrued interest.

***(d) 6.00% Senior Notes Due 2020***

On November 19, 2012, Antero Finance issued \$300 million of 6.00% senior notes due December 1, 2020 at par. In a subsequent transaction, on February 4, 2013 Antero Finance issued an additional \$225 million of the 6.00% notes at 103% of par. The notes are unsecured and effectively subordinated to the Company's Credit Facility to the extent of the value of the collateral securing the

**ANTERO RESOURCES LLC AND SUBSIDIARIES****Notes to Consolidated Financial Statements (Continued)****December 31, 2010, 2011, and 2012****(7) Long-term Debt (Continued)**

Credit Facility. The notes rank pari passu to the existing 9.375% and 7.25% senior notes. The notes are guaranteed on a senior unsecured basis by Antero Resources LLC, all of its wholly owned subsidiaries (other than Antero Finance), and certain of its future restricted subsidiaries. Interest on the notes is payable on June 1 and December 1 of each year, commencing on June 1, 2013. Antero Finance may redeem all or part of the notes at any time on or after December 1, 2015 at redemption prices ranging from 104.500% on or after December 1, 2015 to 100.00% on or after December 1, 2018. In addition, on or before December 1, 2015, Antero Finance may redeem up to 35% of the aggregate principal amount of the notes with the net cash proceeds of certain equity offerings, if certain conditions are met, at a redemption price of 106.00% of the principal amount of the notes, plus accrued interest. At any time prior to December 1, 2015, Antero Finance may redeem the notes, in whole or in part, at a price equal to 100% of the principal amount of the notes plus a "make-whole" premium and accrued interest. If a change of control (as defined in the bond indenture) occurs at any time prior to January 1, 2014, Antero Finance may, at its option, redeem all, but not less than all, of the notes at a redemption price equal to 110% of the principal amount of the notes, plus accrued interest. If Antero Resources LLC undergoes a change of control, the note holders will have the right to require Antero Finance to repurchase all or a portion of the notes at a price equal to 101% of the principal amount of the notes, plus accrued interest.

**(e) 9.00% Senior Note**

The Company assumed a \$25 million unsecured note payable in the business acquisition consummated on December 1, 2010. The note bears interest at 9% and is due December 1, 2013.

**(f) Treasury Management Facility**

The Company has a stand-alone revolving note with a lender under the Credit Facility which provides for up to \$25.0 million of cash management obligations in order to facilitate the Company's daily treasury management. Borrowings under the revolving note are secured by the collateral for the revolving credit facility. Borrowings under the facility bear interest at the lender's prime rate plus 1.0%. The note matures on June 1, 2013. At December 31, 2012, there were no outstanding borrowings under this facility.

**(8) Asset Retirement Obligations**

The following is a reconciliation of the Company's asset retirement obligations for the years ended December 31, 2011 and 2012 (in thousands).

	<u>2011</u>	<u>2012</u>
Asset retirement obligations—beginning of year	\$ 5,374	6,715
Obligations incurred for wells drilled or on properties acquired	906	9,440
Obligations related to assets sold	—	(6,107)
Accretion expense	435	504
Asset retirement obligations—end of year	<u>\$ 6,715</u>	<u>10,552</u>

**ANTERO RESOURCES LLC AND SUBSIDIARIES****Notes to Consolidated Financial Statements (Continued)****December 31, 2010, 2011, and 2012****(9) Ownership Structure**

At December 31, 2012, the outstanding units in Antero Resources LLC are summarized as follows:

	Units authorized and issued
Class I units	107,281,058
Class A and B units	40,007,463
Class A and B profit units	19,726,873
	<u>167,015,394</u>

None of the three classes of outstanding units are entitled to current cash distributions, except as provided in the limited liability operating agreement, nor are they convertible into indebtedness. The Company has no obligation to repurchase these units at the election of the unit holders.

Antero Resources Employee Holdings LLC, a limited liability company owned by certain officers and directors, owns Class A-2, A-4, B-2, B-3, B-4, and B-5 profit units and has issued similar units to its members. These units participate only in distributions upon liquidation events meeting requisite financial return thresholds.

In December 2010, Antero Resources LLC issued new Class I-5 and B-6 units valued in aggregate at \$97 million in connection with the acquisition of Bluestone Energy Partners (see note 4).

In the event of a distribution from Antero Resources LLC, amounts available for distribution are distributed according to a formula set forth in the limited liability company agreement that takes into account the relative priority of the various classes of units outstanding. In the event of a distribution due to the disposition of an individual subsidiary, a portion of the proceeds is allocated to the employees of the Company based on a requisite return financial threshold. In general, distributions are made first to holders of the Class I units until they have received their investment amount and an 8% special allocation and then, as a group, to the holders of all classes of units together. The Class I units participate on a pro rata basis with the other classes of units in funds available for distributions in excess of the Class I unit investment and special allocation amounts.

At December 31, 2012, the Class I units had an aggregate liquidation priority, including the special allocation of 8% per annum, of \$2.191 billion. Under the terms of the Antero Resources LLC limited liability company agreement, the Company is obligated to distribute cash to the members of the limited liability company each year in an amount sufficient for the members to fund income tax liabilities for partnership income allocated to them. As a result of the gain recognized by Antero Resources LLC on the sale of Antero Resources Midstream Corporation in 2010, the Company distributed approximately \$28.9 million to the members to fund income tax liabilities in February 2011.

**(10) Membership Interests Awards**

The Company has issued membership interests in Antero Resources Employee Holdings LLC, a limited liability company owned by certain officers and employees. The membership interests participate only in distributions from Antero Resources LLC in liquidation events, meeting requisite financial thresholds after the Class I and other classes of unitholders have recovered their investment



**ANTERO RESOURCES LLC AND SUBSIDIARIES****Notes to Consolidated Financial Statements (Continued)****December 31, 2010, 2011, and 2012****(10) Membership Interests Awards (Continued)**

and special allocation amounts. The membership interests have no voting rights. Compensation expense for these awards will be recognized when all performance, market, and service conditions are probable of being satisfied (in general, upon a liquidating event). Accordingly, no value was assigned to the interests when issued. A summary of the status of the net membership interests outstanding in Antero Holdings and changes during the year ended December 31, 2012 is summarized as follows:

Balance, January 1, 2012	7,957,283
Granted	806,000
Forfeited/canceled	(203,500)
Outstanding at December 31, 2012	<u>8,559,783</u>

**(11) Financial Instruments**

The carrying values of trade receivables and trade payables at December 31, 2011 and 2012 approximated market value because of their short-term nature. The carrying value of the bank credit facility at December 31, 2011 and 2012 approximated fair value because the variable interest rates are reflective of current market conditions.

The fair value of the Company's senior notes was approximately \$1.3 billion, based on Level 2 market data inputs at December 31, 2012.

See note 12 for information regarding the fair value of derivative financial instruments.

**(12) Derivative Instruments*****(a) Commodity Derivatives***

The Company periodically enters into natural gas derivative contracts with counterparties to hedge the price risk associated with a portion of its production. These derivatives are not held for trading purposes. To the extent that changes occur in the market prices of natural gas, the Company is exposed to market risk on these open contracts. This market risk exposure is generally offset by the change in market prices of natural gas recognized upon the ultimate sale of the natural gas produced.

For the years ended December 31, 2010, 2011, and 2012, the Company was party to natural gas fixed price swaps. When actual commodity prices exceed the fixed price provided by the swap contracts, the Company pays the excess to the counterparty, and when actual commodity prices are below the contractually provided fixed price the Company receives the difference from the counterparty. The Company's natural gas swaps have not been designated as hedges for accounting purposes; therefore, all gains and losses were recognized in income currently.

**ANTERO RESOURCES LLC AND SUBSIDIARIES****Notes to Consolidated Financial Statements (Continued)****December 31, 2010, 2011, and 2012****(12) Derivative Instruments (Continued)**

As of December 31, 2012, the Company has entered into fixed price natural gas and oil swaps in order to hedge a portion of its natural gas and oil production from January 1, 2013 through December 31, 2018 as summarized in the following table.

	<u>MMbtu/day</u>	<u>Bbls/day</u>	<u>price</u>
Year ending December 31, 2013:			
CGTAP	122,631	—	\$ 5.02
Dominion South	191,702	—	4.77
NYMEX-WTI	—	300	90.30
2013 Total	<u>314,333</u>	<u>300</u>	
Year ending December 31, 2014:			
CGLA	10,000		\$ 3.87
CGTAP	200,000		5.16
Dominion South	160,000		5.15
2014 Total	<u>370,000</u>		
Year ending December 31, 2015:			
CGLA	40,000		\$ 4.00
CGTAP	120,000		5.01
Dominion South	230,000		5.60
2015 Total	<u>390,000</u>		
Year ending December 31, 2016:			
CGLA	170,000		\$ 4.09
CGTAP	60,000		4.91
Dominion South	272,500		5.35
2016 Total	<u>502,500</u>		
Year ending December 31, 2017:			
CGLA	<u>420,000</u>		\$ 4.27
Year ending December 31, 2018:			
CGLA	<u>75,000</u>		\$ 4.90

**(b) Interest Rate Derivatives**

From time to time, the Company has entered into various floating-to-fixed interest rate swap derivative contracts to manage exposures to changes in interest rates from variable rate obligations. Under the swaps, the Company made payments to the swap counterparty when the variable LIBOR three-month rate fell below the fixed rate or received payments from the swap counterparty when the variable LIBOR three-month rate went above the fixed rate. The Company had no outstanding interest rate swap agreements at December 31, 2012.

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Consolidated Financial Statements (Continued)**

**December 31, 2010, 2011, and 2012**

**(12) Derivative Instruments (Continued)**

*(c) Summary*

The following is a summary of the fair values of derivative instruments not designated as hedges for accounting purposes and where such values are recorded in the consolidated balance sheets as of December 31, 2011 and 2012. None of the Company's derivative instruments are designated as hedges for accounting purposes.

	2011		2012	
	Balance sheet location	Fair value (In thousands)	Balance sheet location	Fair value (In thousands)
Asset derivatives not designated as hedges for accounting purposes:				
Commodity contracts	Current assets	\$ 248,550	Current assets	\$ 160,579
Commodity contracts	Long-term assets	541,423	Long-term assets	371,436
Total asset derivatives		<u>\$ 789,973</u>		<u>\$ 532,015</u>

The following is a summary of realized and unrealized gains (losses) on derivative instruments and where such values are recorded in the consolidated statements of operations for the years ended December 31, 2010, 2011, and 2012 (in thousands):

	Statement of operations location	2010	2011	2012
Realized gains on commodity contracts	Revenue	\$ 15,063	49,944	178,491
Unrealized gains on commodity contracts	Revenue	62,536	446,120	1,055
Realized gains on commodity contracts	Discontinued operations	58,650	66,654	92,166
Unrealized gains (losses) on commodity contracts	Discontinued operations	108,035	113,476	(45,808)
Total gains on commodity contracts		<u>244,284</u>	<u>676,194</u>	<u>225,904</u>
Realized losses on interest rate contracts	Other expense	(9,552)	(4,306)	—
Unrealized gains on interest rate contracts	Other income	6,875	4,212	—
Total losses on interest rate contracts		<u>(2,677)</u>	<u>(94)</u>	<u>—</u>
Net gains on derivative contracts		<u>\$ 241,607</u>	<u>676,100</u>	<u>225,904</u>

The fair value of commodity and interest rate derivative instruments was determined using Level 2 inputs.

**(13) Income Taxes**

Antero Resources LLC is a partnership for income tax purposes and therefore is not subject to federal or state income taxes. The Company's subsidiaries are subject to federal and state income taxes.

**ANTERO RESOURCES LLC AND SUBSIDIARIES****Notes to Consolidated Financial Statements (Continued)****December 31, 2010, 2011, and 2012****(13) Income Taxes (Continued)**

For the years ended December 31, 2010, 2011, and 2012 income tax expense from continuing operations consisted of the following (in thousands):

	<u>2010</u>	<u>2011</u>	<u>2012</u>
Current income tax expense	\$ —	—	15,000
Deferred income tax expense	939	185,297	106,229
Total income tax expense from continuing operations	<u>\$ 939</u>	<u>185,297</u>	<u>121,229</u>

The income tax expense from continuing operations differs from the amount that would be computed by applying the U.S. statutory federal income tax rate of 35% to consolidated income for the years ended December 31, 2010, 2011, and 2012, as a result of the following (in thousands):

	<u>2010</u>	<u>2011</u>	<u>2012</u>
Federal income tax expense	\$ 404	159,770	121,276
State income tax expense, net of federal benefit	57	23,593	4,761
Change in valuation allowance	1,197	(934)	(4,872)
Other	(719)	2,868	64
Total income tax expense from continuing operations	<u>\$ 939</u>	<u>185,297</u>	<u>121,229</u>

For the years ended December 31, 2010, 2011, and 2012 income tax expense (benefit) was allocated to continuing and discontinued operations as follows (in thousands):

	<u>2010</u>	<u>2011</u>	<u>2012</u>
Continuing operations	\$ 939	185,297	121,229
Discontinued operations and sale of discontinued operations	29,070	45,155	(272,553)
Total income tax expense / (benefit)	<u>\$ 30,009</u>	<u>230,452</u>	<u>(151,324)</u>

Deferred income taxes reflect the impact of temporary differences between amounts of assets and liabilities for financial reporting purposes and such amounts as measured by tax laws. The tax effect of

**ANTERO RESOURCES LLC AND SUBSIDIARIES****Notes to Consolidated Financial Statements (Continued)****December 31, 2010, 2011, and 2012****(13) Income Taxes (Continued)**

the temporary differences giving rise to net deferred tax assets and liabilities at December 31, 2011 and 2012 is as follows (in thousands):

	<u>2011</u>	<u>2012</u>
Deferred tax assets:		
Net operating loss carryforwards	\$ 364,017	417,385
Capital loss carryforwards	5,292	5,367
Minimum tax credit carryforward		15,000
Other	10,490	5,006
Total deferred tax assets	<u>379,799</u>	<u>442,758</u>
Valuation allowance	(13,833)	(47,678)
Net deferred tax assets	<u>365,966</u>	<u>395,080</u>
Deferred tax liabilities:		
Unrealized gains on derivative instruments	311,434	206,937
Depreciation differences on gathering system	5,100	—
Oil and gas properties	370,067	342,455
Total deferred tax liabilities	<u>686,601</u>	<u>549,392</u>
Net deferred tax liabilities	<u>\$ (320,635)</u>	<u>(154,312)</u>

In assessing the realizability of deferred tax assets, management considers whether some portion or all of the deferred tax assets will be realized based on a more likely than not standard of judgment. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income, and tax planning strategies in making this assessment. Based upon the projections for future taxable income over the periods in which the deferred tax assets are deductible, management believes that the Company will not realize the benefits of all of these deductible differences and has recorded a valuation allowance of approximately \$14 million and \$48 million at December 31, 2011 and 2012, respectively, which is primarily related to capital loss carryforwards and certain state NOL carryforwards. The amount of the deferred tax asset considered realizable could be reduced in the near term if estimates of future taxable income during the carryforward period are revised.

The calculation of the Company's tax liabilities involves uncertainties in the application of complex tax laws and regulations. The Company gives financial statement recognition to those tax positions that it believes are more-likely-than-not to be sustained upon examination by the Internal Revenue Service or state revenue authorities. The financial statements include unrecognized benefits at December 31, 2012 of \$15 million that, if recognized, would result in a reduction of noncurrent income taxes payable (included in other long-term liabilities) and an increase in noncurrent deferred tax liabilities. No impact to the Company's 2012 effective tax rate would result. As of December 31, 2012, no interest or

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Consolidated Financial Statements (Continued)**

**December 31, 2010, 2011, and 2012**

**(13) Income Taxes (Continued)**

penalties have been accrued on unrecognized tax benefits. A reconciliation of beginning and ending amount of unrecognized tax benefits is as follows:

	<u>2012</u>
Balance at beginning of year	\$ —
Additions based upon tax positions related to the current year	15,000
Balance at end of year	<u>\$ 15,000</u>

The Company's corporate subsidiaries have U.S Federal and state net operating loss carryforwards (NOLs) as of December 31, 2012 of \$1.0 billion and \$1.3 billion, respectively, which expire at various dates from 2024 to 2032. Included in other current assets are \$14 million of estimated Federal tax payments made during 2012 that will be refunded to the Company when it files its 2012 tax return.

The tax years 2009 through 2012 remain open to examination by the U.S. Internal Revenue Service. The Company and subsidiaries file tax returns with various state taxing authorities; these returns remain open to examination for tax years 2008 through 2012.

**(14) Commitments**

The following is a schedule of future minimum payments for firm transportation agreements, drilling and compression facility obligations, and leases that have remaining lease terms in excess of one year as of December 31, 2012 (in millions).

	Firm transportation (a)	Gas processing, gathering and compression (b)	Drilling rigs and frac Services (c)	Office and equipment (d)	Total
Year ending December 31:					
2013	\$ 36	111	150	1	298
2014	93	107	98	3	301
2015	116	126	44	3	289
2016	116	131	—	3	250
2017	113	125	—	3	241
Thereafter	854	564	—	15	1,433
Total	<u>\$ 1,328</u>	<u>1,164</u>	<u>292</u>	<u>28</u>	<u>2,812</u>

**(a) Firm Transportation**

The Company has entered into firm transportation agreements with various pipelines in order to facilitate the delivery of production to market. These contracts commit the Company to transport minimum daily natural gas volumes or ethane at a negotiated rate, or pay for any deficiencies at a specified reservation fee rate. The amounts in this table represent our minimum daily volumes at the reservation fee rate.

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Consolidated Financial Statements (Continued)**

**December 31, 2010, 2011, and 2012**

**(14) Commitments (Continued)**

***(b) Gas Processing and Compression Service Commitments***

The Company has entered into various long-term gas processing agreements for certain of its production that will allow us to realize the value of our NGLs. The minimum payment obligations under the agreements are presented in the table.

The Company has various compressor service agreements with third parties that provide for payments based on volumes compressed and have minimum payment obligations which are presented in the table.

***(c) Drilling Rig Service Commitments***

The Company has obligations under agreements with service providers to procure drilling rigs and compression and frac services. At December 31, 2012, the Company had contracts for the services of 13 rigs. The contracts expire at various dates from January 2013 through January 2016.

***(d) Office and Equipment Leases***

The Company leases various office space and equipment under operating lease arrangements. Rental expense under operating leases is included in general and administrative expenses and was \$0.8 million, \$1.0 million, and \$1.1 million for the years ended December 31, 2010, 2011, and 2012, respectively.

**(15) Contingencies**

In March 2011, the Company received orders for compliance from the U.S. Environmental Protection Agency relating to certain of our activities in West Virginia. The orders allege that certain of the Company's operations at several well sites are not in compliance with certain environmental regulations pertaining to unpermitted discharges of fill material into wetlands or waters that are potentially in violation of the Clean Water Act. The Company has responded to all pending orders and is actively cooperating with the relevant agencies. No fine or penalty relating to these matters has been proposed at this time, but the Company believes that these actions will result in monetary sanctions exceeding \$100,000. The Company is unable to estimate the total amount of such monetary sanctions or costs to remediate these locations in order to bring them into compliance with applicable environmental laws and regulations.

The Company has been named in separate lawsuits in Colorado, Pennsylvania, and West Virginia in which the plaintiffs have alleged that its oil and natural gas activities exposed them to hazardous substances and damaged their properties and their persons. The plaintiffs have requested unspecified damages and other injunctive or equitable relief. The Company denies any such allegations and intends to vigorously defend itself against these actions. The Company is unable to estimate the amount of monetary or other damages, if any, that might result from these claims.

The Company is party to various other legal proceedings and claims in the ordinary course of its business. The Company believes certain of these matters will be covered by insurance and that the outcome of other matters will not have a material adverse effect on its consolidated financial position, results of operations, or liquidity.

**ANTERO RESOURCES LLC AND SUBSIDIARIES****Notes to Consolidated Financial Statements (Continued)****December 31, 2010, 2011, and 2012****(16) Supplemental Information on Oil and Gas Producing Activities (Unaudited)**

The following is supplemental information regarding our consolidated oil and gas producing activities. The amounts shown include our net working and royalty interests in all of our oil and gas properties.

***(a) Capitalized Costs Relating to Oil and Gas Producing Activities***

	<b>Year ended December 31</b>	
	<b>2011</b>	<b>2012</b>
	<b>(In thousands)</b>	
Proved properties	\$ 2,497,306	1,689,132
Unproved properties	834,255	1,243,237
	<u>3,331,561</u>	<u>2,932,369</u>
Accumulated depreciation and depletion	(586,444)	(158,210)
Net capitalized costs	<u>\$ 2,745,117</u>	<u>2,774,159</u>

***(b) Costs Incurred in Certain Oil and Gas Activities***

	<b>Year ended December 31</b>		
	<b>2010</b>	<b>2011</b>	<b>2012</b>
	<b>(In thousands)</b>		
Acquisition costs			
Proved property	\$ 50,657	\$ 105,405	\$ 10,254
Unproved property	247,733	195,131	687,403
Development costs	224,297	433,053	690,517
Exploration costs	75,961	95,563	158,074
Total costs incurred	<u>\$ 598,648</u>	<u>\$ 829,152</u>	<u>\$ 1,546,248</u>

Costs incurred in 2010 include costs allocated to proved and unproved properties of \$50.7 million and \$206.3 million, respectively, as a result of a business acquisition. See note 3.



**ANTERO RESOURCES LLC AND SUBSIDIARIES****Notes to Consolidated Financial Statements (Continued)****December 31, 2010, 2011, and 2012****(16) Supplemental Information on Oil and Gas Producing Activities (Unaudited) (Continued)*****(c) Results of Operations (including discontinued operations) for Oil and Gas Producing Activities***

	Year ended December 31		
	2010	2011	2012
	(In thousands)		
Revenues	\$ 206,462	391,994	390,378
Operating expenses:			
Production expenses	80,097	136,635	185,505
Exploration expenses	24,794	9,876	15,339
Depreciation and depletion	124,341	164,011	181,664
Impairment	35,859	11,051	13,032
Results of operations before income tax expense (benefit)	(58,629)	70,421	(5,162)
Income tax (expense) benefit	6,449	(26,056)	2,008
Results of operations	\$ (52,180)	44,365	(3,154)

***(d) Oil and Gas Reserves***

The following table sets forth the net quantities of proved reserves and proved developed reserves during the periods indicated. This information includes the oil and gas segment's royalty and net working interest share of the reserves in oil and gas properties. Net proved oil and gas reserves for the year ended December 31, 2011 and 2012 were prepared by the Company's reserve engineers and audited by DeGolyer and MacNaughton (D&M) or Ryder Scott utilizing data compiled by us. Over 99% of our estimated proved reserves as of December 31, 2010 were prepared by D&M, Ryder Scott, or Wright & Co. There are many uncertainties inherent in estimating proved reserve quantities, and projecting future production rates and timing of future development costs. In addition, reserve estimates of new discoveries are more imprecise than those of properties with a production history. Accordingly, these estimates are subject to change as additional information becomes available. All reserves are located in the United States.

Proved reserves are the estimated quantities of crude oil, condensate, and natural gas that geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known oil and gas reservoirs under existing economic and operating conditions at the end of the respective years. Proved developed reserves are those reserves expected to be recovered through existing wells with existing equipment and operating methods. The Company estimates proved reserves using historical 12-month unweighted first day of the month average prices.

Proved undeveloped reserves include drilling locations that are more than one offset location away from productive wells and are reasonably certain of containing proved reserves and which are scheduled to be drilled within five years under the Company's development plans. The Company's development plans for drilling scheduled over the next five years are subject to many uncertainties and

ANTERO RESOURCES LLC AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

December 31, 2010, 2011, and 2012

(16) Supplemental Information on Oil and Gas Producing Activities (Unaudited) (Continued)

variables, including availability of capital; future oil and gas prices; and cash flows from operations, future drilling costs, demand for natural gas, and other economic factors.

	Natural gas (Bcf)	NGLS (MMBbl)	Oil and condensate (MMBbl)	Equivalents (Bcfe)
Proved developed and undeveloped reserves:				
December 31, 2009	1,130	—	1	1,141
Revisions	38	35	1	253
Extensions, discoveries and other additions	1,248	69	8	1,712
Production	(45)	—	—(a)	(47)
Purchase of reserves	172	—	—	172
December 31, 2010	2,543	104	10	3,231

(a) Less than 1.0

	Natural gas (Bcf)	NGLS (MMBbl)	Oil and condensate (MMBbl)	Equivalents (Bcfe)
Revisions	(223)	(28)	7	(352)
Extensions, discoveries and other additions	1,644	87	—(a)	2,162
Production	(84)	(1)	—(a)	(89)
Purchase of reserves	52	2	—	66
Sale of reserves in place	(1)	—	—	(1)
December 31, 2011	3,931	164	17	5,017
Revisions	198	4	—(a)	222
Extensions, discoveries and other additions	1,242	115	3	1,951
Production	(87)	—(a)	—(a)	(87)
Sale of reserves in place	(1,590)	(80)	(17)	(2,174)
December 31, 2012	3,694	203	3	4,929

(a) Less than 1.0

	Natural gas (Bcf)	NGLS (MMBbl)	Oil and condensate (MMBbl)	Equivalents (Bcfe)
Proved developed reserves:				
December 31, 2010	400	9	1	457
December 31, 2011	718	19	2	844
December 31, 2012	828	36	1	1,047
Proved undeveloped reserves:				
December 31, 2010	2,143	95	10	2,774
December 31, 2011	3,213	145	15	4,173
December 31, 2012	2,866	167	2	3,882

**ANTERO RESOURCES LLC AND SUBSIDIARIES**

**Notes to Consolidated Financial Statements (Continued)**

**December 31, 2010, 2011, and 2012**

**(16) Supplemental Information on Oil and Gas Producing Activities (Unaudited) (Continued)**

Significant items included in the categories of proved developed and undeveloped reserve changes for the years 2010, 2011, and 2012 in the above table include the following:

- 2010—Of the 1,712 Bcfe of extensions and discoveries in 2010, 249 Bcfe related to the Arkoma Basin in Oklahoma, 1,130 Bcfe related to the Piceance Basin in Colorado, 301 Bcfe related to the Appalachian Basin in Pennsylvania and West Virginia, and 32 Bcfe related to other areas. Performance revisions increased proved reserves by 253 Bcfe. The increase in extensions and discoveries is the result of increased activity in the Appalachian Basin and the future realization of the value of our NGLs in the Piceance Basin because of a processing agreement that became effective on January 1, 2011.
- 2011—Of the 2,162 Bcfe of extensions and discoveries in 2011, 93 Bcfe related to the Arkoma Basin in Oklahoma, 61 Bcfe related to the Piceance Basin in Colorado, 1,995 Bcfe related to the Appalachian Basin in Pennsylvania and West Virginia, and 12 Bcfe related to other areas. Downward price revisions resulted in a reduction in proved reserves of 6 Bcfe. Performance revisions reduced proved reserves by 346 Bcfe. Extensions and discoveries are primarily the result of increased development activity in the Appalachian Basin and the future realization of the value of our Appalachian NGLs as a result of the execution of a long-term processing agreement expected to occur in the third quarter of 2012 when the processing plant is completed.
- 2012—Extensions, discoveries, and other additions during 2012 of 1,951 Bcfe were added through the drillbit in the Marcellus and Utica Shales, including the addition of 709 Bcfe attributable to NGLs and oil. Downward price revisions resulted in a reduction of proved reserves of 102 Bcfe. Performance revisions increased proved reserves by 324 Bcfe. Sales of proved reserves of 2,174 Bcfe are the result of the sale of our Arkoma and Piceance Basin properties.

The following table sets forth the standardized measure of the discounted future net cash flows attributable to our proved reserves. Future cash inflows were computed by applying historical 12-month unweighted first day of the month average prices. Future prices actually received may materially differ from current prices or the prices used in the standardized measure.

Future production and development costs represent the estimated future expenditures (based on current costs) to be incurred in developing and producing the proved reserves, assuming continuation of existing economic conditions. Future income tax expenses were computed by applying statutory income tax rates to the difference between pretax net cash flows relating to our proved reserves and the tax basis of proved oil and gas properties. In addition, the effects of statutory depletion in excess of tax basis, available net operating loss carryforwards, and alternative minimum tax credits were used in

**ANTERO RESOURCES LLC AND SUBSIDIARIES****Notes to Consolidated Financial Statements (Continued)****December 31, 2010, 2011, and 2012****(16) Supplemental Information on Oil and Gas Producing Activities (Unaudited) (Continued)**

computing future income tax expense. The resulting annual net cash inflows were then discounted using a 10% annual rate.

	<b>Year ended December 31</b>		
	<b>2010</b>	<b>2011</b>	<b>2012</b>
	<b>(In millions)</b>		
Future cash inflows	\$ 13,114	20,046	12,151
Future production costs	(3,088)	(3,491)	(1,660)
Future development costs	(4,036)	(5,085)	(3,270)
Future net cash flows before income tax	5,990	11,470	7,221
Future income tax expense	(1,438)	(3,287)	(1,603)
Future net cash flows	4,552	8,183	5,618
10% annual discount for estimated timing of cash flows	(3,455)	(5,713)	(4,017)
Standardized measure of discounted future net cash flows	\$ 1,097	2,470	1,601

The 12-month weighted average prices used to estimate the Company's total equivalent reserves were as follows:

	<b>Arkoma</b>	<b>Piceance</b>	<b>Appalachia</b>
	<b>(Per Mcfe)</b>		
December 31, 2010	\$ 4.18	3.93	4.51
December 31, 2011	3.90	3.84	4.16
December 31, 2012	NA	NA	2.78

## ANTERO RESOURCES LLC AND SUBSIDIARIES

## Notes to Consolidated Financial Statements (Continued)

December 31, 2010, 2011, and 2012

## (16) Supplemental Information on Oil and Gas Producing Activities (Unaudited) (Continued)

*(e) Changes in Standardized Measure of Discounted Future Net Cash Flow*

	Year ended December 31		
	2010	2011	2012
	(In millions)		
Sales of oil and gas, net of productions costs	\$ (126)	(255)	(147)
Net changes in prices and production costs	382	215	(1,631)
Development costs incurred during the period	81	247	296
Net changes in future development costs	(61)	(106)	(92)
Extensions, discoveries and other additions	695	1,684	813
Acquisitions	92	51	—
Divestitures	—	—	(1,277)
Revisions of previous quantity estimates	113	(182)	88
Accretion of discount	29	147	322
Net change in income taxes	(359)	(605)	653
Other changes	16	177	106
Net increase (decrease)	862	1,373	(869)
Beginning of year	235	1,097	2,470
End of year	<u>\$ 1,097</u>	<u>2,470</u>	<u>1,601</u>

## ANNEX A: GLOSSARY OF NATURAL GAS AND OIL TERMS

The following are abbreviations and definitions of certain terms used in this document, which are commonly used in the oil and natural gas industry:

"*Bbl.*" One stock tank barrel, of 42 U.S. gallons liquid volume, used herein in reference to crude oil, condensate or NGLs.

"*Bcf.*" One billion cubic feet of natural gas.

"*Bcfe.*" One billion cubic feet of natural gas equivalent with one barrel of oil, condensate or NGLs converted to six thousand cubic feet of natural gas.

"*BTU.*" British thermal unit.

"*Basin.*" A large natural depression on the earth's surface in which sediments generally brought by water accumulate.

"*Completion.*" The process of treating a drilled well followed by the installation of permanent equipment for the production of natural gas or oil, or in the case of a dry hole, the reporting of abandonment to the appropriate agency.

"*Cryogenic processing.*" A set of processes that reduces the temperature of natural gas, which in turn allows for the removal of condensed ethane or other NGLs.

"*DD&A.*" Depreciation, depletion, amortization and accretion.

"*Delineation.*" The process of placing a number of wells in various parts of a reservoir to determine its boundaries and production characteristics.

"*Developed acreage.*" The number of acres that are allocated or assignable to productive wells or wells capable of production.

"*Development well.*" A well drilled within the proved area of an oil or natural gas reservoir to the depth of a stratigraphic horizon known to be productive.

"*Dry gas.*" A natural gas containing insufficient quantities of hydrocarbons heavier than methane to allow their commercial extraction or to require their removal in order to render the gas suitable for fuel use.

"*Dry hole.*" A well found to be incapable of producing hydrocarbons in sufficient quantities such that proceeds from the sale of such production exceed production expenses and taxes.

"*Exploratory well.*" A well drilled to find and produce natural gas or oil reserves not classified as proved, to find a new reservoir in a field previously found to be productive of natural gas or oil in another reservoir or to extend a known reservoir.

"*Field.*" An area consisting of a single reservoir or multiple reservoirs all grouped on, or related to, the same individual geological structural feature or stratigraphic condition. The field name refers to the surface area, although it may refer to both the surface and the underground productive formations.

"*Formation.*" A layer of rock which has distinct characteristics that differs from nearby rock.

"*Gross acres or gross wells.*" The total acres or wells, as the case may be, in which a working interest is owned.

"*Highly rich gas.*" Gas having a heat content over 1250 BTU.

"*Horizontal drilling.*" A drilling technique used in certain formations where a well is drilled vertically to a certain depth and then drilled at a right angle within a specified interval.

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"*MBbl.*" One thousand barrels of crude oil, condensate or NGLs.

"*Mcf.*" One thousand cubic feet of natural gas.

"*MMBbl.*" One million barrels of crude oil, condensate or NGLs.

"*MMBoe.*" One million barrels of oil equivalent.

"*MMBtu.*" One million British thermal units.

"*MMcf.*" One million cubic feet of natural gas.

"*MMcfe.*" One million cubic feet equivalent, determined using the ratio of six Mcf of natural gas to one Bbl of crude oil, condensate or NGLs.

"*MMcfe/d.*" MMcfe per day.

"*NGLs.*" Natural gas liquids. Hydrocarbons found in natural gas which may be extracted as liquefied petroleum gas and natural gasoline.

"*NYMEX.*" The New York Mercantile Exchange.

"*Net acres.*" The percentage of total acres an owner has out of a particular number of acres, or a specified tract. An owner who has 50% interest in 100 acres owns 50 net acres.

"*Possible reserves.*" Reserves that are less certain to be recovered than probable reserves.

"*Potential well locations.*" Total gross resource play locations that we may be able to drill on our existing acreage. Actual drilling activities may change depending on the availability of capital, regulatory approvals, seasonal restrictions, natural gas and oil prices, costs, drilling results and other factors.

"*Probable reserves.*" Reserves that are less certain to be recovered than proved reserves but that, together with proved reserves, are as likely as not to be recovered.

"*Productive well.*" A well that is found to be capable of producing hydrocarbons in sufficient quantities such that proceeds from the sale of the production exceed production expenses and taxes.

"*Prospect.*" A specific geographic area which, based on supporting geological, geophysical or other data and also preliminary economic analysis using reasonably anticipated prices and costs, is deemed to have potential for the discovery of commercial hydrocarbons.

"*Proved developed reserves.*" Reserves that can be expected to be recovered through existing wells with existing equipment and operating methods.

"*Proved reserves.*" The estimated quantities of oil, natural gas and NGLs which geological and engineering data demonstrate with reasonable certainty to be commercially recoverable in future years from known reservoirs under existing economic and operating conditions.

"*Proved undeveloped reserves ("PUD").*" Proved reserves that are expected to be recovered from new wells on undrilled acreage or from existing wells where a relatively major expenditure is required for recompletion.

"*PV-10.*" When used with respect to natural gas and oil reserves, PV-10 means the estimated future gross revenue to be generated from the production of proved reserves, net of estimated production, future development and abandonment costs, using prices and costs in effect at the determination date, before income taxes, and without giving effect to non-property-related expenses, discounted to a present value using an annual discount rate of 10% in accordance with the guidelines of the SEC. PV-10 is not a financial measure calculated in accordance with generally accepted accounting principles, or GAAP, and generally differs from standardized measure, the most directly comparable GAAP financial measure, because it does not include the effects of income taxes on future net revenues.

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Neither PV-10 nor standardized measure represents an estimate of the fair market value of our natural gas and oil properties. We and others in the industry use PV-10 as a measure to compare the relative size and value of proved reserves held by companies without regard to the specific tax characteristics of such entities.

*"Recompletion."* The process of re-entering an existing wellbore that is either producing or not producing and completing new reservoirs in an attempt to establish or increase existing production.

*"Reservoir."* A porous and permeable underground formation containing a natural accumulation of producible oil and/or natural gas that is confined by impermeable rock or water barriers and is separate from other reservoirs.

*"Rich gas."* Gas having a heat content of between 1050 BTU to 1250 BTU.

*"Spacing."* The distance between wells producing from the same reservoir. Spacing is often expressed in terms of acres, e.g., 40-acre spacing, and is often established by regulatory agencies.

*"Standardized measure."* Discounted future net cash flows estimated by applying year-end prices to the estimated future production of year-end proved reserves. Future cash inflows are reduced by estimated future production and development costs based on period-end costs to determine pre-tax cash inflows. Future income taxes, if applicable, are computed by applying the statutory tax rate to the excess of pre-tax cash inflows over our tax basis in the natural gas and oil properties. Future net cash inflows after income taxes are discounted using a 10% annual discount rate.

*"Undeveloped acreage."* Lease acreage on which wells have not been drilled or completed to a point that would permit the production of commercial quantities of natural gas and oil regardless of whether such acreage contains proved reserves.

*"Unit."* The joining of all or substantially all interests in a reservoir or field, rather than a single tract, to provide for development and operation without regard to separate property interests. Also, the area covered by a unitization agreement.

*"Wellbore."* The hole drilled by the bit that is equipped for natural gas production on a completed well. Also called well or borehole.

*"Working interest."* The right granted to the lessee of a property to explore for and to produce and own natural gas or other minerals. The working interest owners bear the exploration, development, and operating costs on either a cash, penalty, or carried basis.



**Shares**



**Antero Resources Corporation**

**Common Stock**

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**Prospectus**  
2013

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**Barclays**  
**Citigroup**  
**J.P. Morgan**  
**Credit Suisse**  
**Jefferies**  
**Wells Fargo Securities**

Through and including \_\_\_\_\_, (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

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**PART II****INFORMATION NOT REQUIRED IN PROSPECTUS****Item 13. Other Expenses of Issuance and Distribution**

The following table sets forth an itemized statement of the amounts of all expenses (excluding underwriting discounts and commissions) payable by us in connection with the registration of the common stock offered hereby. With the exception of the SEC registration fee and the FINRA filing fee, the amounts set forth below are estimates.

SEC registration fee	\$ 136,400
FINRA filing fee	150,500
NYSE listing fee	*
Accountants' fees and expenses	*
Legal fees and expenses	*
Printing and engraving expenses	*
Transfer agent and registrar fees	*
Miscellaneous	*
<b>Total</b>	<b>\$ *</b>

\* To be filed by amendment.

**Item 14. Indemnification of Directors and Officers.**

We expect that our amended and restated certificate of incorporation will provide that a director will not be liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (1) for any breach of the director's duty of loyalty to the corporation or its stockholders, (2) for acts or omissions not in good faith or which involved intentional misconduct or a knowing violation of the law, (3) under section 174 of the DGCL for unlawful payment of dividends or improper redemption of stock or (4) for any transaction from which the director derived an improper personal benefit. In addition, if the DGCL is amended to authorize the further elimination or limitation of the liability of directors, then the liability of a director of the corporation, in addition to the limitation on personal liability that will be provided by our amended and restated certificate of incorporation, will be limited to the fullest extent permitted by the amended DGCL. We expect that our amended and restated bylaws will provide that the corporation will indemnify, and advance expenses to, any officer or director to the fullest extent authorized by the DGCL.

Section 145 of the DGCL provides that a corporation may indemnify directors and officers as well as other employees and individuals against expenses, including attorneys' fees, judgments, fines and amounts paid in settlement in connection with specified actions, suits and proceedings whether civil, criminal, administrative, or investigative, other than a derivative action by or in the right of the corporation, if they acted in good faith and in a manner they reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe their conduct was unlawful. A similar standard is applicable in the case of derivative actions, except that indemnification extends only to expenses, including attorneys' fees, incurred in connection with the defense or settlement of such action and the statute requires court approval before there can be any indemnification where the person seeking indemnification has been found liable to the corporation. The statute provides that it is not exclusive of other indemnification that may be granted by a corporation's certificate of incorporation, bylaws, disinterested director vote, stockholder vote, agreement or otherwise.

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We expect that our amended and restated certificate of incorporation will also contain indemnification rights for our directors and our officers. Specifically, we expect that our amended and restated certificate of incorporation will provide that we shall indemnify our officers and directors to the fullest extent authorized by the DGCL. Further, we may maintain insurance on behalf of our officers and directors against expense, liability or loss asserted incurred by them in their capacities as officers and directors.

We have obtained directors' and officers' insurance to cover our directors, officers and some of our employees for certain liabilities.

We will enter into written indemnification agreements with our directors and officers. Under these proposed agreements, if an officer or director makes a claim of indemnification to us, either a majority of the independent directors or independent legal counsel selected by the independent directors must review the relevant facts and make a determination whether the officer or director has met the standards of conduct under Delaware law that would permit (under Delaware law) and require (under the indemnification agreement) us to indemnify the officer or director.

**Item 15. Recent Sales of Unregistered Securities.**

None.

**Item 16. Exhibits and Financial Statement Schedules.**

(a) The following documents are filed as exhibits to this Registration Statement.

<u>Exhibit Number</u>	<u>Description</u>
1.1**	Form of Underwriting Agreement
2.1	Purchase and Sale Agreement, dated June 1, 2012, between Antero Resources Corporation and Vanguard Permian, LLC (incorporated by reference to Exhibit 2.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on July 5, 2012)
2.2	Purchase and Sale Agreement by and among Antero Resources Piceance LLC, Antero Resources Pipeline LLC and Ursa Resources Group II LLC, dated as of November 1, 2012 (incorporated by reference to Exhibit 2.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on November 6, 2012)
3.1***	Amended and Restated Certificate of Incorporation of Antero Resources Appalachian Corporation
3.2***	Bylaws of Antero Resources Appalachian Corporation
3.3***	Amendment to the Amended and Restated Certificate of Incorporation of Antero Resources Appalachian Corporation
3.4**	Form of Second Amended and Restated Certificate of Incorporation of Antero Resources Corporation
3.5**	Form of Amended and Restated Bylaws of Antero Resources Corporation
4.1**	Form of Common Stock Certificate
4.2	Indenture dated as of November 17, 2009 among Antero Resources Finance Corporation, the several guarantors named therein, and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.1 to Registration Statement on Form S-4 (Commission File No. 333-164876) filed on February 12, 2010)

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<u>Exhibit Number</u>	<u>Description</u>
4.3	Indenture dated as of August 1, 2011 by and among Antero Resources Finance Corporation, the several guarantors named therein and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on August 1, 2011)
4.4	Indenture dated as of November 19, 2012 by and among Antero Resources Finance Corporation, the several guarantors named therein and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on November 20, 2012)
5.1**	Opinion of Vinson & Elkins L.L.P. as to the legality of the securities being registered
10.1	Fourth Amended and Restated Credit Agreement dated as of November 4, 2010 among Antero Resources Corporation, Antero Resources Piceance Corporation, Antero Resources Pipeline Corporation and Antero Resources Appalachian Corporation, as Borrowers, certain subsidiaries of Borrowers, as Guarantors, the Lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Wells Fargo Bank, N.A., as Syndication Agent, Bank of Scotland Plc, Union Bank, N.A., Credit Agricole Corporate and Investment Bank, BNP Paribas and Deutsche Bank Trust Company Americas, as Co-Documentation Agents and J.P. Morgan Securities LLC and Wells Fargo Securities, LLC, as Joint Lead Arrangers and Joint Bookrunners (incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on November 11, 2010)
10.2	First Amendment to the Fourth Amended And Restated Credit Agreement, dated as of May 12, 2011, among Antero Resources Corporation, Antero Resources Piceance Corporation, Antero Resources Pipeline Corporation and Antero Resources Appalachian Corporation, as Borrowers, certain subsidiaries of Borrowers, as Guarantors, the Lenders party thereto and JPMorgan Chase Bank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.1 to Form 10-Q (Commission File No. 333-164876) filed on May 16, 2011)
10.3	Second Amendment to Fourth Amended And Restated Credit Agreement dated as of July 8, 2011 among Antero Resources Corporation, Antero Resources Piceance Corporation, Antero Resources Pipeline Corporation and Antero Resources Appalachian Corporation, as Borrowers, certain subsidiaries of Borrowers, as Guarantors, the Lenders party thereto and JP Morgan Chase Bank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on July 11, 2011)
10.4	Third Amendment to Fourth Amended And Restated Credit Agreement dated as of October 26, 2011 among Antero Resources Corporation, Antero Resources Piceance Corporation, Antero Resources Pipeline Corporation and Antero Resources Appalachian Corporation, as Borrowers, certain subsidiaries of Borrowers, as Guarantors, the Lenders party thereto and JP Morgan Chase Bank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on October 28, 2011)

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<u>Exhibit Number</u>	<u>Description</u>
10.5	Fourth Amendment to Fourth Amended And Restated Credit Agreement dated as of May 4, 2012 among Antero Resources Corporation, Antero Resources Piceance Corporation, Antero Resources Pipeline Corporation and Antero Resources Appalachian Corporation, as Borrowers, certain subsidiaries of Borrowers, as Guarantors, the Lenders party thereto and JP Morgan Chase Bank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.2 to Current Report on Form 8-K (Commission File No. 333-164876) filed on May 7, 2012)
10.6	Fifth Amendment to Fourth Amended and Restated Credit Agreement dated as of October 25, 2012 among Antero Resources Arkoma LLC, Antero Resources Piceance LLC, Antero Resources Pipeline LLC and Antero Resources Appalachian Corporation, as Borrowers, certain subsidiaries of Borrowers, as Guarantors, the Lenders party hereto, and JP Morgan Chase Bank, N.A. as Administrative Agent (incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on October 26, 2012)
10.7	Sixth Amendment to Fourth Amended and Restated Credit Agreement dated May 9, 2013 by and among Antero Resources Appalachian Corporation and JPMorgan Chase Bank, N.A., as administrative agent for the lenders, to increase the borrowing base and lender commitments and amend the current ratio covenant under the Fourth Amended and Restated Credit Agreement dated as of November 4, 2010 (incorporated by reference to Exhibit 10.2 to Quarterly Report on Form 10-Q (Commission File No. 333-164876) filed on May 13, 2013)
10.8	Letter Agreement dated June 29, 2012 by and among Antero Resources Corporation, Antero Resources Piceance Corporation, Antero Resources Pipeline Corporation, Antero Resources Appalachian Corporation and JPMorgan Chase Bank N.A., as administrative agent for the lenders, to reduce the borrowing base and lender commitments under the Fourth Amended and Restated Credit Agreement dated as of November 4, 2010 (incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on July 5, 2012)
10.9	Letter Agreement dated November 19, 2012 by and among Antero Resources Arkoma LLC, Antero Resources Piceance LLC, Antero Resources Pipeline LLC, and Antero Resources Appalachian Corporation and JPMorgan Chase Bank N.A., as administrative agent for the lenders, to reduce the borrowing base and lender commitments under the Fourth Amended and Restated Credit Agreement dated as of November 4, 2010 (incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on December 10, 2012)
10.10	Letter Agreement dated December 7, 2012 by and among Antero Resources Arkoma LLC, Antero Resources Piceance LLC, Antero Resources Pipeline LLC, and Antero Resources Appalachian Corporation and JPMorgan Chase Bank N.A., as administrative agent for the lenders, to reduce the borrowing base and lender commitments under the Fourth Amended and Restated Credit Agreement dated as of November 4, 2010 (incorporated by reference to Exhibit 10.2 to Current Report on Form 8-K (Commission File No. 333-164876) filed on December 10, 2012)

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<u>Exhibit Number</u>	<u>Description</u>
10.11	Letter Agreement dated February 4, 2013 by and among Antero Resources Arkoma LLC, Antero Resources Piceance LLC, Antero Resources Pipeline LLC, and Antero Resources Appalachian Corporation and JPMorgan Chase Bank, N.A., as administrative agent for the lenders, to reduce the borrowing base and lender commitments under the Fourth Amended and Restated Credit Agreement dated as of November 4, 2010 (incorporated by reference to Exhibit 10.2 to Current Report on Form 8-K (Commission File No. 333-164876) filed on February 4, 2013)
10.12	Limited Liability Company Agreement of Antero Resources Employee Holdings LLC, dated as of November 3, 2009 (incorporated by reference to Exhibit 10.9 to Registration Statement on Form S-4 (Commission File No. 333-164876) filed on February 12, 2010)
10.13**	Form of Long-Term Incentive Plan of Antero Resources Corporation
10.14**	Form of Indemnification Agreement between Antero Resources Corporation and each of the directors and executive officers thereof
10.15**	Form of Employment Agreement between Antero Resources Corporation and each of the executive officers thereof
10.16**	Form of Contribution Agreement
10.17**	Form of Registration Rights Agreement among Antero Resources Corporation and certain equity owners
10.18**	Form of Gas Processing and Fractionation Agreement
10.19**	Form of Gas Gathering and Compression Agreement
10.20**	Form of Water Services Agreement
10.21**	Form of Credit Support Agreement
10.22**	Form of Services Agreement
21.1**	List of Subsidiaries of Antero Resources Corporation
23.1*	Consent of KPMG LLP
23.2*	Consent of DeGolyer and MacNaughton
23.3*	Consent of Ryder Scott & Company
23.4**	Consent of Vinson & Elkins L.L.P. (included as part of Exhibit 5.1 hereto)
24.1***	Power of Attorney (included on the signature page of this registration statement)
99.1*	Report of DeGolyer and MacNaughton for proved reserves as of December 31, 2012 relating to Marcellus and Upper Devonian resources in the Appalachian Basin
99.2*	Report of DeGolyer and MacNaughton for probable reserves as of December 31, 2012 relating to Marcellus and Upper Devonian resources in the Appalachian Basin
99.3*	Report of DeGolyer and MacNaughton for possible reserves as of December 31, 2012 relating to Marcellus and Upper Devonian resources in the Appalachian Basin
99.4*	Report of DeGolyer and MacNaughton for proved reserves as of December 31, 2012 relating to Utica Shale resources in the Appalachian Basin

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<u>Exhibit Number</u>	<u>Description</u>
99.5*	Report of DeGolyer and MacNaughton for probable reserves as of December 31, 2012 relating to Utica Shale resources in the Appalachian Basin
99.6*	Report of DeGolyer and MacNaughton for possible reserves as of December 31, 2012 relating to Utica Shale resources in the Appalachian Basin
99.7	Report of DeGolyer and MacNaughton for reserves as of December 31, 2011 relating to Appalachian Basin properties (incorporated by reference to Exhibit 99.1 to Annual Report on Form 10-K (Commission File No. 333-164876) filed on March 20, 2012)
99.8	Report of DeGolyer and MacNaughton for reserves as of December 31, 2011 relating to Arkoma Basin, Woodford Shale and Fayetteville Shale properties (incorporated by reference to Exhibit 99.2 to Annual Report on Form 10-K (Commission File No. 333-164876) filed on March 20, 2012)
99.9	Report of Ryder Scott Company, L.P. for reserves as of December 31, 2011 relating to Piceance Basin properties (incorporated by reference to Exhibit 99.3 to Annual Report on Form 10-K (Commission File No. 333-164876) filed on March 20, 2012)
99.10	Report of DeGolyer and MacNaughton for reserves as of December 31, 2010 relating to Appalachian Basin properties (incorporated by reference to Exhibit 99.1 to Annual Report on Form 10-K/A (Commission File No. 333-164876) filed on April 11, 2012)
99.11	Report of DeGolyer and MacNaughton for reserves as of December 31, 2010 relating to Arkoma Basin, Woodford Shale and Fayetteville Shale properties (incorporated by reference to Exhibit 99.2 to Annual Report on Form 10-K/A (Commission File No. 333-164876) filed on April 11, 2012)
99.12	Report of Ryder Scott Company, L.P. for reserves as of December 31, 2010 relating to Piceance Basin properties (incorporated by reference to Exhibit 99.3 to Annual Report on Form 10-K/A (Commission File No. 333-164876) filed on April 11, 2012)
99.13*	Report of DeGolyer and MacNaughton for proved reserves as of June 30, 2013 relating to Marcellus resources in the Appalachian Basin
99.14*	Report of DeGolyer and MacNaughton for probable reserves as of June 30, 2013 relating to Marcellus resources in the Appalachian Basin
99.15*	Report of DeGolyer and MacNaughton for possible reserves as of June 30, 2013 relating to Marcellus resources in the Appalachian Basin
99.16*	Report of DeGolyer and MacNaughton for proved reserves as of June 30, 2013 relating to Upper Devonian resources in the Appalachian Basin
99.17*	Report of DeGolyer and MacNaughton for probable reserves as of June 30, 2013 relating to Upper Devonian resources in the Appalachian Basin
99.18*	Report of DeGolyer and MacNaughton for possible reserves as of June 30, 2013 relating to Upper Devonian resources in the Appalachian Basin
99.19*	Report of DeGolyer and MacNaughton for proved reserves as of June 30, 2013 relating to Utica Shale resources in the Appalachian Basin
99.20*	Report of DeGolyer and MacNaughton for probable reserves as of June 30, 2013 relating to Utica Shale resources in the Appalachian Basin

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<u>Exhibit Number</u>	<u>Description</u>
99.21*	Report of DeGolyer and MacNaughton for possible reserves as of June 30, 2013 relating to Utica Shale resources in the Appalachian Basin
*	Filed herewith.
**	To be filed by amendment.
***	Previously filed.

**Item 17. Undertakings.**

The undersigned registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.



**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, each registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Denver, State of Colorado, on July 30, 2013.

**ANTERO RESOURCES CORPORATION**

By: /s/ GLEN C. WARREN, JR.

\_\_\_\_\_  
Name: Glen C. Warren, Jr.  
Title: *President, Chief Financial Officer and Secretary*

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons for and in the capacities indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
* _____ Paul M. Rady	Chairman of the Board, Director and Chief Executive Officer (principal executive officer)	July 30, 2013
/s/ GLEN C. WARREN, JR. _____ Glen C. Warren, Jr.	Director, President, Chief Financial Officer and Secretary (principal financial officer)	July 30, 2013
* _____ Alvyn A. Schopp	Vice President—Accounting & Administration and Treasurer (principal accounting officer)	July 30, 2013
* _____ Peter R. Kagan	Director	July 30, 2013
* _____ W. Howard Keenan, Jr.	Director	July 30, 2013
* _____ Christopher R. Manning	Director	July 30, 2013
*By: /s/ GLEN C. WARREN, JR. _____ Glen C. Warren, Jr. <i>Attorney-in-Fact</i>		

## INDEX TO EXHIBITS

<b>Exhibit Number</b>	<b>Description</b>
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2.1	Purchase and Sale Agreement, dated June 1, 2012, between Antero Resources Corporation and Vanguard Permian, LLC (incorporated by reference to Exhibit 2.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on July 5, 2012)
2.2	Purchase and Sale Agreement by and among Antero Resources Piceance LLC, Antero Resources Pipeline LLC and Ursa Resources Group II LLC, dated as of November 1, 2012 (incorporated by reference to Exhibit 2.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on November 6, 2012)
3.1***	Amended and Restated Certificate of Incorporation of Antero Resources Appalachian Corporation
3.2***	Bylaws of Antero Resources Appalachian Corporation
3.3***	Amendment to the Amended and Restated Certificate of Incorporation of Antero Resources Appalachian Corporation
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10.1	Fourth Amended and Restated Credit Agreement dated as of November 4, 2010 among Antero Resources Corporation, Antero Resources Piceance Corporation, Antero Resources Pipeline Corporation and Antero Resources Appalachian Corporation, as Borrowers, certain subsidiaries of Borrowers, as Guarantors, the Lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Wells Fargo Bank, N.A., as Syndication Agent, Bank of Scotland Plc, Union Bank, N.A., Credit Agricole Corporate and Investment Bank, BNP Paribas and Deutsche Bank Trust Company Americas, as Co-Documentation Agents and J.P. Morgan Securities LLC and Wells Fargo Securities, LLC, as Joint Lead Arrangers and Joint Bookrunners (incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on November 11, 2010)

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<u>Exhibit Number</u>	<u>Description</u>
10.2	First Amendment to the Fourth Amended And Restated Credit Agreement, dated as of May 12, 2011, among Antero Resources Corporation, Antero Resources Piceance Corporation, Antero Resources Pipeline Corporation and Antero Resources Appalachian Corporation, as Borrowers, certain subsidiaries of Borrowers, as Guarantors, the Lenders party thereto and JPMorgan Chase Bank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.1 to Form 10-Q (Commission File No. 333-164876) filed on May 16, 2011)
10.3	Second Amendment to Fourth Amended And Restated Credit Agreement dated as of July 8, 2011 among Antero Resources Corporation, Antero Resources Piceance Corporation, Antero Resources Pipeline Corporation and Antero Resources Appalachian Corporation, as Borrowers, certain subsidiaries of Borrowers, as Guarantors, the Lenders party thereto and JP Morgan Chase Bank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on July 11, 2011)
10.4	Third Amendment to Fourth Amended And Restated Credit Agreement dated as of October 26, 2011 among Antero Resources Corporation, Antero Resources Piceance Corporation, Antero Resources Pipeline Corporation and Antero Resources Appalachian Corporation, as Borrowers, certain subsidiaries of Borrowers, as Guarantors, the Lenders party thereto and JP Morgan Chase Bank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on October 28, 2011)
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<u>Exhibit Number</u>	<u>Description</u>
10.8	Letter Agreement dated June 29, 2012 by and among Antero Resources Corporation, Antero Resources Piceance Corporation, Antero Resources Pipeline Corporation, Antero Resources Appalachian Corporation and JPMorgan Chase Bank N.A., as administrative agent for the lenders, to reduce the borrowing base and lender commitments under the Fourth Amended and Restated Credit Agreement dated as of November 4, 2010 (incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on July 5, 2012)
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10.12	Limited Liability Company Agreement of Antero Resources Employee Holdings LLC, dated as of November 3, 2009 (incorporated by reference to Exhibit 10.9 to Registration Statement on Form S-4 (Commission File No. 333-164876) filed on February 12, 2010)
10.13**	Form of Long-Term Incentive Plan of Antero Resources Corporation
10.14**	Form of Indemnification Agreement between Antero Resources Corporation and each of the directors and executive officers thereof
10.15**	Form of Employment Agreement between Antero Resources Corporation and each of the executive officers thereof
10.16**	Form of Contribution Agreement
10.17**	Form of Registration Rights Agreement among Antero Resources Corporation and certain equity owners
10.18**	Form of Gas Processing and Fractionation Agreement
10.19**	Form of Gas Gathering and Compression Agreement
10.20**	Form of Water Services Agreement
10.21**	Form of Credit Support Agreement

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<u>Exhibit Number</u>	<u>Description</u>
10.22**	Form of Services Agreement
21.1**	List of Subsidiaries of Antero Resources Corporation
23.1*	Consent of KPMG LLP
23.2*	Consent of DeGolyer and MacNaughton
23.3*	Consent of Ryder Scott & Company
23.4**	Consent of Vinson & Elkins L.L.P. (included as part of Exhibit 5.1 hereto)
24.1***	Power of Attorney (included on the signature page of this registration statement)
99.1*	Report of DeGolyer and MacNaughton for proved reserves as of December 31, 2012 relating to Marcellus and Upper Devonian resources in the Appalachian Basin
99.2*	Report of DeGolyer and MacNaughton for probable reserves as of December 31, 2012 relating to Marcellus and Upper Devonian resources in the Appalachian Basin
99.3*	Report of DeGolyer and MacNaughton for possible reserves as of December 31, 2012 relating to Marcellus and Upper Devonian resources in the Appalachian Basin
99.4*	Report of DeGolyer and MacNaughton for proved reserves as of December 31, 2012 relating to Utica Shale resources in the Appalachian Basin
99.5*	Report of DeGolyer and MacNaughton for probable reserves as of December 31, 2012 relating to Utica Shale resources in the Appalachian Basin
99.6*	Report of DeGolyer and MacNaughton for possible reserves as of December 31, 2012 relating to Utica Shale resources in the Appalachian Basin
99.7	Report of DeGolyer and MacNaughton for reserves as of December 31, 2011 relating to Appalachian Basin properties (incorporated by reference to Exhibit 99.1 to Annual Report on Form 10-K (Commission File No. 333-164876) filed on March 20, 2012)
99.8	Report of DeGolyer and MacNaughton for reserves as of December 31, 2011 relating to Arkoma Basin, Woodford Shale and Fayetteville Shale properties (incorporated by reference to Exhibit 99.2 to Annual Report on Form 10-K (Commission File No. 333-164876) filed on March 20, 2012)
99.9	Report of Ryder Scott Company, L.P. for reserves as of December 31, 2011 relating to Piceance Basin properties (incorporated by reference to Exhibit 99.3 to Annual Report on Form 10-K (Commission File No. 333-164876) filed on March 20, 2012)
99.10	Report of DeGolyer and MacNaughton for reserves as of December 31, 2010 relating to Appalachian Basin properties (incorporated by reference to Exhibit 99.1 to Annual Report on Form 10-K/A (Commission File No. 333-164876) filed on April 11, 2012)
99.11	Report of DeGolyer and MacNaughton for reserves as of December 31, 2010 relating to Arkoma Basin, Woodford Shale and Fayetteville Shale properties (incorporated by reference to Exhibit 99.2 to Annual Report on Form 10-K/A (Commission File No. 333-164876) filed on April 11, 2012)
99.12	Report of Ryder Scott Company, L.P. for reserves as of December 31, 2010 relating to Piceance Basin properties (incorporated by reference to Exhibit 99.3 to Annual Report on Form 10-K/A (Commission File No. 333-164876) filed on April 11, 2012)

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<u>Exhibit Number</u>	<u>Description</u>
99.13*	Report of DeGolyer and MacNaughton for proved reserves as of June 30, 2013 relating to Marcellus resources in the Appalachian Basin
99.14*	Report of DeGolyer and MacNaughton for probable reserves as of June 30, 2013 relating to Marcellus resources in the Appalachian Basin
99.15*	Report of DeGolyer and MacNaughton for possible reserves as of June 30, 2013 relating to Marcellus resources in the Appalachian Basin
99.16*	Report of DeGolyer and MacNaughton for proved reserves as of June 30, 2013 relating to Upper Devonian resources in the Appalachian Basin
99.17*	Report of DeGolyer and MacNaughton for probable reserves as of June 30, 2013 relating to Upper Devonian resources in the Appalachian Basin
99.18*	Report of DeGolyer and MacNaughton for possible reserves as of June 30, 2013 relating to Upper Devonian resources in the Appalachian Basin
99.19*	Report of DeGolyer and MacNaughton for proved reserves as of June 30, 2013 relating to Utica Shale resources in the Appalachian Basin
99.20*	Report of DeGolyer and MacNaughton for probable reserves as of June 30, 2013 relating to Utica Shale resources in the Appalachian Basin
99.21*	Report of DeGolyer and MacNaughton for possible reserves as of June 30, 2013 relating to Utica Shale resources in the Appalachian Basin

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\* Filed herewith.

\*\* To be filed by amendment.

\*\*\* Previously filed.



Consent of Independent Registered Public Accounting Firm

The Board of Directors and Members  
Antero Resources LLC:

We consent to the use of our report included herein and to the reference to our firm under the heading "Experts" in Amendment No. 1 to the Registration Statement.

/s/ KPMG LLP

KPMG LLP  
Denver, Colorado  
July 30, 2013

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**DEGOLYER AND MACNAUGHTON  
5001 SPRING VALLEY ROAD  
SUITE 800 EAST  
DALLAS, TEXAS 75244**

July 29, 2013

Antero Resources Finance Corporation  
1625 17th Street  
Denver, Colorado 80202

Ladies and Gentlemen:

We hereby consent to the use of the name DeGolyer and MacNaughton, to references to DeGolyer and MacNaughton as independent petroleum engineers, and to the inclusion of information taken from each of our reports dated February 14, 2011, January 27, 2012, July 23, 2013, and July 24, 2013 related to the Appalachian Basin properties of Antero Resources LLC, found in the Marcellus, Upper Devonian and Utica Shales, and from our reports dated February 17, 2011 and January 27, 2012 related to the Arkoma Basin, Woodford Shale and Fayetteville Shale properties of Antero Resources Corporation in the form and context in which they appear in this Amendment No. 1 to the Registration Statement on Form S-1 of Antero Resources Corporation and the related prospectus that is a part thereof. We further consent to the reference to this firm under the heading "EXPERTS" in the Registration Statement and related prospectus.

Very truly yours,

/s/ DeGOLYER and MacNAUGHTON

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

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**CONSENT OF INDEPENDENT PETROLEUM ENGINEERS**

The undersigned hereby consents to the references to our firm in the form and context in which they appear in this Amendment No. 1 to the Registration Statement on Form S-1 of Antero Resources Corporation and the related prospectus that is a part thereof. We hereby further consent to the use in such Registration Statement and related prospectus of information contained in our reports dated January 19, 2012 and January 28, 2011 relating to the estimates of the oil and gas reserves and related revenues of Antero Resources Corporation's Piceance Basin Properties.

We further consent to the reference to this firm under the heading "EXPERTS" in Amendment No. 1 to the Registration Statement and related prospectus.

/s/ Ryder Scott Company, LP

Ryder Scott Company, LP

Denver, Colorado  
July 29, 2013

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**DeGolyer and MacNaughton**  
5001 Spring Valley Road  
Suite 800 East  
Dallas, Texas 75244

July 23, 2013

Antero Resources Appalachian Corporation  
1625 17th Street  
Suite 300  
Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted an audit of the estimates of net proved crude oil, condensate, natural gas liquids (NGL), and natural gas reserves and present worth, as of December 31, 2012, prepared by the engineering staff of Antero Resources Appalachian Corporation (Antero) for working and royalty interests owned in Pennsylvania and West Virginia. This evaluation was completed on May 15, 2013. Antero has represented that these properties account for 85 percent on a million cubic feet equivalent basis of Antero's net proved reserves in the Marcellus and Upper Devonian Shales in the Appalachian basin as of December 31, 2012. Antero has represented to us that these properties account for approximately 83.00 percent on a million cubic feet equivalent basis of Antero's net proved reserves as of December 31, 2012, and that the net proved reserves estimates have been prepared in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of December 31, 2012, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves included herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after December 31, 2012. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others. NGL have been estimated for certain

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properties and are based on the NGL yields provided by Antero and assume recovery of ethane during processing.

Future gross revenue is that revenue which will accrue to the appraised interests from the production and sale of the estimated net reserves. Future net revenue is calculated by deducting production and ad valorem taxes, operating expenses, and capital costs from the future gross revenue. Present worth is defined as future net revenue discounted at a specified arbitrary rate compounded monthly over the expected period of realization.

At the request of Antero, we have prepared an audit of the estimates of net proved oil, condensate, NGL, and natural gas reserves and present worth, as of December 31, 2012, prepared by the engineering staff of Antero for the same properties assuming rejection of ethane during NGL processing, referred to as the "Ethane Rejection Sensitivity Case." As of December 31, 2012, ethane recovery was economic at SEC pricing; by the completion of our audit, however, ethane recovery had become uneconomic. Given the volatility in ethane prices, both ethane recovery and ethane rejection cases were included as of December 31, 2012 to provide comparability between reserves and present worth at 10 percent.

Estimates of oil, condensate, NGL, and natural gas reserves and associated revenue should be regarded only as estimates that may change as further production history and additional information become available. Not only are such reserves and revenue estimates based on that information which is currently available, but such estimates are also subject to the uncertainties inherent in the application of judgmental factors in interpreting such information.

Data used in this audit were obtained from reviews with Antero personnel, Antero files, from records on file with the appropriate regulatory agencies, and from public sources. In the preparation of this report we have relied, without independent verification, upon such information furnished by Antero with respect to property interests, production from such properties, current costs of operation and development, current prices for production, agreements relating to current and future operations and sale of production, and various other information and data that were accepted as represented. A field examination of the properties was not considered necessary for the purposes of this report.

### **Methodology and Procedures**

Estimates of reserves were prepared by the use of appropriate geological and engineering methods that are in accordance with practices generally recognized by the petroleum industry as presented in the publication of the Society of Petroleum Engineers entitled "Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information (Revision as of February 19, 2007)." The

method or combination of methods used in the analysis of each reservoir was tempered by experience with similar reservoirs, stage of development, quality and completeness of basic data, and production history. These assumptions, data, methods, and procedures are considered appropriate for the purpose for which this report has been prepared.

For depletion-type reservoirs or those whose performance disclosed a reliable decline in producing-rate trends or other diagnostic characteristics, reserves were estimated by the application of appropriate decline curves or other performance relationships. In the analyses of production-decline curves, reserves were estimated only to the limits of economic production or to the limit of the production licenses as appropriate.

Petroleum reserves estimated by Antero and by us are classified as proved and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net proved reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero's methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the state in which the interest is located. Condensate reserves estimated herein are those to be recovered by conventional lease separation.

### **Definition of Reserves**

Petroleum reserves estimated by Antero included in this report are classified as proved. Only proved reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the SEC. Reserves are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classified as follows:

*Proved oil and gas reserves* — Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience,

engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and  
(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be

determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

*Developed oil and gas reserves* — Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

- (i) Through existing wells with existing equipment and operating methods or in which the cost of the required

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equipment is relatively minor compared to the cost of a new well; and

- (ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

*Undeveloped oil and gas reserves* — Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

- (i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

- (ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

- (iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in [section 210.4—10 (a) Definitions], or by other evidence using reliable technology establishing reasonable certainty.

#### **Primary Economic Assumptions**

The following economic assumptions were used for estimating existing and future prices and costs:

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#### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$85.05 per barrel. The resulting weighted-average price for NGL was \$21.75 per barrel.

#### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$2.78 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$1.99 per thousand cubic feet.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant's ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the December 31, 2012, estimated oil and gas volumes. The

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reserves estimated in this report can be produced under current regulatory guidelines.

Antero has represented that estimated net proved reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of proved reserves of the SEC. Antero represents that its estimates of the net proved reserves and present worth attributable to these properties, which represent 83.00 percent of Antero's total proved reserves on a net equivalent basis, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Estimated by Antero</b>				
	<b>Net Proved Reserves and Present Worth at 10 Percent</b>				
	<b>as of December 31, 2012</b>				
	<b>Oil and Condensate (Mbbbl)</b>	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	1,252	171,418	3,055,370	4,091,391	1,766,243
Not Audited by DeGolyer and MacNaughton	112	22,864	577,161	715,021	8,468
<b>Total Marcellus and Upper Devonian Proved Reserves</b>	<b>1,364</b>	<b>194,282</b>	<b>3,632,531</b>	<b>4,806,412</b>	<b>1,774,711</b>

Notes:

1. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
2. Numbers may not add due to rounding.
3. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In our opinion, the information relating to the audited estimated proved reserves, estimated future net revenue from proved reserves, and present worth of estimated future net revenue from proved reserves of oil, condensate, natural gas liquids, and gas contained in this report has been prepared in accordance with Paragraphs 932-235-50-4, 932-235-50-6, 932-235-50-7, 932-235-50-9, 932-235-50-30, and 932-235-50-31(a), (b), and (e) of the Accounting Standards Update 932-235-50, *Extractive Industries — Oil and Gas (Topic 932): Oil and Gas Reserve Estimation and Disclosures* (January 2010) of the Financial Accounting Standards Board and Rules 4—10(a) (1)—(32) of Regulation S—X and Rules 302(b), 1201, 1202(a) (1), (2), (3), (4), (8), and 1203(a) of Regulation S—K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein and (ii) estimates of the proved developed and proved undeveloped reserves are not presented at the beginning of the year.

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To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necessarily unable to express an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net proved reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.4 percent when compared on a net gas equivalent basis. It is our opinion that there is no material difference between the net proved reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 0.4 percent overall difference. It is our opinion that there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for those properties we audited.

#### **Ethane Rejection Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net proved reserves for the Ethane Rejection Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The only adjustments made were to NGL yields and pricing to take into account ethane rejection and natural gas heating value adjustments. The following economic assumptions were used for estimating existing and future prices and costs for the Ethane Rejection Sensitivity Case:

##### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the

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end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$85.05 per barrel. The resulting weighted-average price for NGL was \$48.88 per barrel.

#### Natural Gas Prices

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$2.78 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$2.17 per thousand cubic feet.

#### Operating Expenses and Capital Costs

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

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Antero represents that its estimates of the net proved reserves and present worth attributable to the properties audited, under the aforementioned Ethane Rejection Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	Ethane Rejection Sensitivity Case				
	Estimated by Antero				
	Net Proved Reserves and Present Worth at 10 Percent as of December 31, 2012				
	Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)
Audited by DeGolyer and MacNaughton	1,194	48,006	3,261,234	3,556,433	1,601,454
Not Audited by DeGolyer and MacNaughton	170	7,847	579,086	627,189	717
<b>Total Marcellus and Upper Devonian Proved Reserves</b>	<b>1,364</b>	<b>55,853</b>	<b>3,840,320</b>	<b>4,183,623</b>	<b>1,602,171</b>

#### Notes:

1. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
2. Numbers may not add due to rounding.
3. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net proved reserves estimates prepared by us and by Antero for the Ethane Rejection Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.6 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net proved reserves estimates prepared by Antero and those prepared by us for the Ethane Rejection Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Rejection Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 1.4 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Rejection Sensitivity Case.

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DeGolyer and MacNaughton is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1936. DeGolyer and MacNaughton does not have any financial interest, including stock ownership, in Antero. Our fees were not contingent on the results of our evaluation. This letter report has been prepared at the request of Antero. DeGolyer and MacNaughton has used all data, assumptions, procedures, and methods that it considers necessary to prepare this report.

Very truly yours,

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

/s/ Gregory K. Graves, P.E.  
Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**CERTIFICATE of QUALIFICATION**

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

1. That I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report addressed to Antero dated July 23, 2013, and that I, as Senior Vice President, was responsible for the preparation of this report.
2. That I attended the University of Texas at Austin, and that I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers; and that I have in excess of 28 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.  
Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**DeGolyer and MacNaughton**  
5001 Spring Valley Road  
Suite 800 East  
Dallas, Texas 75244

July 23, 2013

Antero Resources Appalachian Corporation  
1625 17th Street  
Suite 300  
Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted an audit of the estimates of net probable crude oil, condensate, natural gas liquids (NGL), and natural gas reserves and present worth, as of December 31, 2012, prepared by the engineering staff of Antero Resources Appalachian Corporation (Antero) for working and royalty interests owned in Pennsylvania and West Virginia. This evaluation was completed on May 15, 2013. Antero has represented that these properties account for 85 percent on a million cubic feet equivalent basis of Antero's net probable reserves in the Marcellus Shale in the Appalachian basin as of December 31, 2012. Antero has represented to us that these properties account for approximately 84.49 percent on a million cubic feet equivalent basis of Antero's net probable reserves as of December 31, 2012, and that the net probable reserves estimates have been prepared in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of December 31, 2012, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves included herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after December 31, 2012. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others. NGL have been estimated for certain

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properties and are based on the NGL yields provided by Antero and assume recovery of ethane during processing.

Future gross revenue is that revenue which will accrue to the appraised interests from the production and sale of the estimated net reserves. Future net revenue is calculated by deducting production and ad valorem taxes, operating expenses, and capital costs from the future gross revenue. Present worth is defined as future net revenue discounted at a specified arbitrary rate compounded monthly over the expected period of realization.

At the request of Antero, we have prepared an audit of the estimates of net probable oil, condensate, NGL, and natural gas reserves and present worth, as of December 31, 2012, prepared by the engineering staff of Antero for the same properties assuming rejection of ethane during NGL processing, referred to as the "Ethane Rejection Sensitivity Case." As of December 31, 2012, ethane recovery was economic at SEC pricing; by the completion of our audit, however, ethane recovery had become uneconomic. Given the volatility in ethane prices, both ethane recovery and ethane rejection cases were included as of December 31, 2012, to provide comparability between reserves and present worth at 10 percent.

Estimates of oil, condensate, NGL, and natural gas reserves and associated revenue should be regarded only as estimates that may change as further production history and additional information become available. Not only are such reserves and revenue estimates based on that information which is currently available, but such estimates are also subject to the uncertainties inherent in the application of judgmental factors in interpreting such information.

Data used in this audit were obtained from reviews with Antero personnel, Antero files, from records on file with the appropriate regulatory agencies, and from public sources. In the preparation of this report we have relied, without independent verification, upon such information furnished by Antero with respect to property interests, production from such properties, current costs of operation and development, current prices for production, agreements relating to current and future operations and sale of production, and various other information and data that were accepted as represented. A field examination of the properties was not considered necessary for the purposes of this report.

### **Methodology and Procedures**

Estimates of reserves were prepared by the use of appropriate geological and engineering methods that are in accordance with practices generally recognized by the petroleum industry as presented in the publication of the Society of Petroleum Engineers entitled "Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information (Revision as of February 19, 2007)." The

method or combination of methods used in the analysis of each reservoir was tempered by experience with similar reservoirs, stage of development, quality and completeness of basic data, and production history. These assumptions, data, methods, and procedures are considered appropriate for the purpose for which this report has been prepared.

For depletion-type reservoirs or those whose performance disclosed a reliable decline in producing-rate trends or other diagnostic characteristics, reserves were estimated by the application of appropriate decline curves or other performance relationships. In the analyses of production-decline curves, reserves were estimated only to the limits of economic production or to the limit of the production licenses as appropriate.

Petroleum reserves estimated by Antero and by us are classified as probable and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net probable reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero's methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the state in which the interest is located. Condensate reserves estimated herein are those to be recovered by conventional lease separation.

### **Definition of Reserves**

Petroleum reserves estimated by Antero included in this report are classified as probable. Only probable reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the SEC. Reserves are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classified as follows:

*Proved oil and gas reserves* — Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience,

engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and  
(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be

determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

*Probable reserves* — Probable reserves are those additional reserves that are less certain to be recovered than proved reserves but which, together with proved reserves, are as likely as not to be recovered.

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(i) When deterministic methods are used, it is as likely as not that actual remaining quantities recovered will exceed the sum of estimated proved plus probable reserves. When probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the proved plus probable reserves estimates.

(ii) Probable reserves may be assigned to areas of a reservoir adjacent to proved reserves where data control or interpretations of available data are less certain, even if the interpreted reservoir continuity of structure or productivity does not meet the reasonable certainty criterion. Probable reserves may be assigned to areas that are structurally higher than the proved area if these areas are in communication with the proved reservoir.

(iii) Probable reserves estimates also include potential incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than assumed for proved reserves.

(iv) See also guidelines in paragraphs (iv) and (vi) of the definition of possible reserves.

*Possible reserves* — Possible reserves are those additional reserves that are less certain to be recovered than probable reserves.

(i) When deterministic methods are used, the total quantities ultimately recovered from a project have a low probability of exceeding proved plus probable plus possible reserves. When probabilistic methods are used, there should be at least a 10% probability that the total quantities ultimately recovered will equal or exceed the proved plus probable plus possible reserves estimates.

(ii) Possible reserves may be assigned to areas of a reservoir adjacent to probable reserves where data control and interpretations of available data are progressively less certain. Frequently, this will be in areas where geoscience and

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engineering data are unable to define clearly the area and vertical limits of commercial production from the reservoir by a defined project.

(iii) Possible reserves also include incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than the recovery quantities assumed for probable reserves.

(iv) The proved plus probable and proved plus probable plus possible reserves estimates must be based on reasonable alternative technical and commercial interpretations within the reservoir or subject project that are clearly documented, including comparisons to results in successful similar projects.

(v) Possible reserves may be assigned where geoscience and engineering data identify directly adjacent portions of a reservoir within the same accumulation that may be separated from proved areas by faults with displacement less than formation thickness or other geological discontinuities and that have not been penetrated by a wellbore, and the registrant believes that such adjacent portions are in communication with the known (proved) reservoir. Possible reserves may be assigned to areas that are structurally higher or lower than the proved area if these areas are in communication with the proved reservoir.

(vi) Pursuant to paragraph (iii) of the proved oil and gas definition, where direct observation has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves should be assigned in the structurally higher portions of the reservoir above the HKO only if the higher contact can be established with reasonable certainty through reliable technology. Portions of the reservoir that do not meet this reasonable certainty criterion may be assigned as probable and possible oil or gas based on reservoir fluid properties and pressure gradient interpretations.

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*Developed oil and gas reserves* — Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

(i) Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and

(ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

*Undeveloped oil and gas reserves* — Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in [section 210.4—10 (a) Definitions], or by other evidence using reliable technology establishing reasonable certainty.

The extent to which probable reserves ultimately may be reclassified as proved reserves is dependent upon future drilling, testing, and well performance.

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The degree of risk to be applied in evaluating probable reserves is influenced by economic and technological factors as well as the time element. Probable reserves in this report have not been adjusted in consideration of these additional risks and therefore are not comparable with proved reserves.

### **Primary Economic Assumptions**

The following economic assumptions were used for estimating existing and future prices and costs:

#### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$85.05 per barrel. The resulting weighted-average price for NGL was \$26.48 per barrel.

#### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$2.78 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$2.06 per thousand cubic feet.

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#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant's ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the December 31, 2012, estimated oil and gas volumes. The reserves estimated in this report can be produced under current regulatory guidelines.

Antero has represented that estimated net probable reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of probable reserves of the SEC. Antero represents that its estimates of the net probable reserves attributable to these properties, which represent 84.49 percent of Antero's total probable reserves on a net equivalent basis, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

Estimated by Antero

**Net Probable Reserves and Present Worth at 10 Percent  
as of December 31, 2012**

	<b>Oil and Condensate (Mbbbl)</b>	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	17,861	865,147	7,296,203	12,594,251	5,995,459
Not Audited by DeGolyer and MacNaughton	2,644	132,161	1,354,386	2,163,216	462,285
<b>Total Marcellus Probable</b>	<b>20,505</b>	<b>997,308</b>	<b>8,650,589</b>	<b>14,757,467</b>	<b>6,457,743</b>

Notes:

1. Probable reserves and values for probable reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

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In our opinion, the information relating to the audited estimated probable reserves, estimated future net revenue from probable reserves, and present worth of estimated future net revenue from probable reserves of oil, condensate, natural gas liquids, and gas contained in this report has been prepared in accordance with Rules 4—10(a) (1)—(32) of Regulation S—X and Rules 302(b), 1201, 1202(a) (1), (2), (3), (4), and (8) of Regulation S—K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein and (ii) estimates of the probable developed and probable undeveloped reserves are not presented at the beginning of the year.

To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necessarily unable to express an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net probable reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.4 percent when compared on a net gas equivalent basis. It is our opinion that there is no material difference between the net probable reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 0.8 percent overall difference. It is our opinion that there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for those properties we audited.

**Ethane Rejection Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net probable reserves for the Ethane Rejection Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital

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costs, or abandonment costs. The only adjustments made were to NGL yields and pricing to take into account ethane rejection and natural gas heating value adjustments. The following economic assumptions were used for estimating existing and future prices and costs for the Ethane Rejection Sensitivity Case:

*Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$85.05 per barrel. The resulting weighted-average price for NGL was \$51.60 per barrel.

*Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$2.78 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$2.32 per thousand cubic feet.

## Operating Expenses and Capital Costs

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

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Antero represents that its estimates of the net probable reserves and present worth attributable to the properties audited, under the aforementioned Ethane Rejection Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	Ethane Rejection Sensitivity Case				
	Estimated by Antero				
	Net Probable Reserves and Present Worth at 10 Percent as of December 31, 2012				
	Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)
Audited by DeGolyer and MacNaughton	17,853	327,763	8,109,916	10,183,617	5,341,133
Not Audited by DeGolyer and MacNaughton	2,642	49,271	1,479,270	1,790,749	385,174
<b>Total Marcellus Probable</b>	<b>20,496</b>	<b>377,034</b>	<b>9,589,186</b>	<b>11,974,366</b>	<b>5,726,308</b>

### Notes:

1. Probable reserves and values for probable reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net probable reserves estimates prepared by us and by Antero for the Ethane Rejection Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.4 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net probable reserves estimates prepared by Antero and those prepared by us for the Ethane Rejection Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Rejection Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 1.1 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Rejection Sensitivity Case.

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DeGolyer and MacNaughton is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1936. DeGolyer and MacNaughton does not have any financial interest, including stock ownership, in Antero. Our fees were not contingent on the results of our evaluation. This letter report has been prepared at the request of Antero. DeGolyer and MacNaughton has used all data, assumptions, procedures, and methods that it considers necessary to prepare this report.

Very truly yours,

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**CERTIFICATE of QUALIFICATION**

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

1. That I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report addressed to Antero dated July 23, 2013, and that I, as Senior Vice President, was responsible for the preparation of this report.
2. That I attended the University of Texas at Austin, and that I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers; and that I have in excess of 28 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**DeGolyer and MacNaughton**  
5001 Spring Valley Road  
Suite 800 East  
Dallas, Texas 75244

July 23, 2013

Antero Resources Appalachian Corporation  
1625 17th Street  
Suite 300  
Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted an audit of the estimates of net possible crude oil, condensate, natural gas liquids (NGL), and natural gas reserves and present worth, as of December 31, 2012, prepared by the engineering staff of Antero Resources Appalachian Corporation (Antero) for working and royalty interests owned in Pennsylvania and West Virginia. This evaluation was completed on May 15, 2013. Antero has represented that these properties account for 85 percent on a million cubic feet equivalent basis of Antero's net possible reserves in the Marcellus Shale in the Appalachian basin as of December 31, 2012. Antero has represented to us that these properties account for approximately 21.54 percent on a million cubic feet equivalent basis of Antero's net possible reserves as of December 31, 2012, and that the net possible reserves estimates have been prepared in accordance with the reserves definitions of Rules 4-10(a) (1)-(32) of Regulation S-X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of December 31, 2012, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves included herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after December 31, 2012. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others. NGL have been estimated for certain

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properties and are based on the NGL yields provided by Antero and assume recovery of ethane during processing.

Future gross revenue is that revenue which will accrue to the appraised interests from the production and sale of the estimated net reserves. Future net revenue is calculated by deducting production and ad valorem taxes, operating expenses, and capital costs from the future gross revenue. Present worth is defined as future net revenue discounted at a specified arbitrary rate compounded monthly over the expected period of realization.

At the request of Antero, we have prepared an audit of the estimates of net possible oil, condensate, NGL, and natural gas reserves and present worth, as of December 31, 2012, prepared by the engineering staff of Antero for the same properties assuming rejection of ethane during NGL processing, referred to as the "Ethane Rejection Sensitivity Case." As of December 31, 2012, ethane recovery was economic at SEC pricing; by the completion of our audit, however, ethane recovery had become uneconomic. Given the volatility in ethane prices, both ethane recovery and ethane rejection cases were included as of December 31, 2012, to provide comparability between reserves and present worth at 10 percent.

Estimates of oil, condensate, NGL, and natural gas reserves and associated revenue should be regarded only as estimates that may change as further production history and additional information become available. Not only are such reserves and revenue estimates based on that information which is currently available, but such estimates are also subject to the uncertainties inherent in the application of judgmental factors in interpreting such information.

Data used in this audit were obtained from reviews with Antero personnel, Antero files, from records on file with the appropriate regulatory agencies, and from public sources. In the preparation of this report we have relied, without independent verification, upon such information furnished by Antero with respect to property interests, production from such properties, current costs of operation and development, current prices for production, agreements relating to current and future operations and sale of production, and various other information and data that were accepted as represented. A field examination of the properties was not considered necessary for the purposes of this report.

### **Methodology and Procedures**

Estimates of reserves were prepared by the use of appropriate geological and engineering methods that are in accordance with practices generally recognized by the petroleum industry as presented in the publication of the Society of Petroleum Engineers entitled "Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information (Revision as of February 19, 2007)." The



method or combination of methods used in the analysis of each reservoir was tempered by experience with similar reservoirs, stage of development, quality and completeness of basic data, and production history. These assumptions, data, methods, and procedures are considered appropriate for the purpose for which this report has been prepared.

For depletion-type reservoirs or those whose performance disclosed a reliable decline in producing-rate trends or other diagnostic characteristics, reserves were estimated by the application of appropriate decline curves or other performance relationships. In the analyses of production-decline curves, reserves were estimated only to the limits of economic production or to the limit of the production licenses as appropriate.

Petroleum reserves estimated by Antero and by us are classified as possible and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net possible reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero's methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the state in which the interest is located. Condensate reserves estimated herein are those to be recovered by conventional lease separation.

### **Definition of Reserves**

Petroleum reserves estimated by Antero included in this report are classified as possible. Only possible reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4–10(a) (1)–(32) of Regulation S–X of the SEC. Reserves are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classified as follows:

*Proved oil and gas reserves* – Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience,

engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and  
(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be

determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

*Probable reserves* – Probable reserves are those additional reserves that are less certain to be recovered than proved reserves but which, together with proved reserves, are as likely as not to be recovered.

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(i) When deterministic methods are used, it is as likely as not that actual remaining quantities recovered will exceed the sum of estimated proved plus probable reserves. When probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the proved plus probable reserves estimates.

(ii) Probable reserves may be assigned to areas of a reservoir adjacent to proved reserves where data control or interpretations of available data are less certain, even if the interpreted reservoir continuity of structure or productivity does not meet the reasonable certainty criterion. Probable reserves may be assigned to areas that are structurally higher than the proved area if these areas are in communication with the proved reservoir.

(iii) Probable reserves estimates also include potential incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than assumed for proved reserves.

(iv) See also guidelines in paragraphs (iv) and (vi) of the definition of possible reserves.

*Possible reserves* – Possible reserves are those additional reserves that are less certain to be recovered than probable reserves.

(i) When deterministic methods are used, the total quantities ultimately recovered from a project have a low probability of exceeding proved plus probable plus possible reserves. When probabilistic methods are used, there should be at least a 10% probability that the total quantities ultimately recovered will equal or exceed the proved plus probable plus possible reserves estimates.

(ii) Possible reserves may be assigned to areas of a reservoir adjacent to probable reserves where data control and interpretations of available data are progressively less certain. Frequently, this will be in areas where geoscience and

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engineering data are unable to define clearly the area and vertical limits of commercial production from the reservoir by a defined project.

(iii) Possible reserves also include incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than the recovery quantities assumed for probable reserves.

(iv) The proved plus probable and proved plus probable plus possible reserves estimates must be based on reasonable alternative technical and commercial interpretations within the reservoir or subject project that are clearly documented, including comparisons to results in successful similar projects.

(v) Possible reserves may be assigned where geoscience and engineering data identify directly adjacent portions of a reservoir within the same accumulation that may be separated from proved areas by faults with displacement less than formation thickness or other geological discontinuities and that have not been penetrated by a wellbore, and the registrant believes that such adjacent portions are in communication with the known (proved) reservoir. Possible reserves may be assigned to areas that are structurally higher or lower than the proved area if these areas are in communication with the proved reservoir.

(vi) Pursuant to paragraph (iii) of the proved oil and gas definition, where direct observation has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves should be assigned in the structurally higher portions of the reservoir above the HKO only if the higher contact can be established with reasonable certainty through reliable technology. Portions of the reservoir that do not meet this reasonable certainty criterion may be assigned as probable and possible oil or gas based on reservoir fluid properties and pressure gradient interpretations.

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*Developed oil and gas reserves* – Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

(i) Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and

(ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

*Undeveloped oil and gas reserves* – Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in [section 210.4–10 (a) Definitions], or by other evidence using reliable technology establishing reasonable certainty.

The extent to which possible reserves ultimately may be reclassified as proved reserves is dependent upon future drilling, testing, and well performance. The degree of risk to be applied in evaluating possible reserves is influenced by

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economic and technological factors as well as the time element. Possible reserves in this report have not been adjusted in consideration of these additional risks and therefore are not comparable with proved reserves.

### **Primary Economic Assumptions**

The following economic assumptions were used for estimating existing and future prices and costs:

#### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$85.05 per barrel. The resulting weighted-average price for NGL was \$26.36 per barrel.

#### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$2.78 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$2.12 per thousand cubic feet.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs

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required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant's ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the December 31, 2012, estimated oil and gas volumes. The reserves estimated in this report can be produced under current regulatory guidelines.

Antero has represented that estimated net possible reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of possible reserves of the SEC. Antero represents that its estimates of the net possible reserves attributable to these properties, which represent 21.54 percent of Antero's total possible reserves in the Marcellus Shale on a net equivalent basis, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

Estimated by Antero

**Net Possible Reserves and Present Worth at 10 Percent  
as of December 31, 2012**

	<b>Oil and Condensate (Mbbl)</b>	<b>Natural Gas Liquids (Mbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	1,367	60,730	985,646	1,358,228	372,733
Not Audited by DeGolyer and MacNaughton	177	6,517	197,175	237,339	13,095
<b>Total Marcellus Possible</b>	<b>1,544</b>	<b>67,247</b>	<b>1,182,821</b>	<b>1,595,567</b>	<b>385,828</b>

Notes:

1. Possible reserves and values for possible reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In our opinion, the information relating to the audited estimated possible reserves, estimated future net revenue from possible reserves, and present worth of

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estimated future net revenue from possible reserves of oil, condensate, natural gas liquids, and gas contained in this report has been prepared in accordance with Rules 4—10(a) (1)—(32) of Regulation S—X and Rules 302(b), 1201, 1202(a) (1), (2), (3), (4), (5), and (8) of Regulation S—K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein and (ii) estimates of the possible developed and possible undeveloped reserves are not presented at the beginning of the year.

To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necessarily unable to express an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net possible reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.4 percent when compared on a net gas equivalent basis. It is our opinion that there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 1.9 percent overall difference. It is our opinion that there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for those properties we audited.

**Ethane Rejection Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net possible reserves for the Ethane Rejection Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The only adjustments made were to NGL yields and pricing to take into account ethane rejection and natural gas heating value

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adjustments. The following economic assumptions were used for estimating existing and future prices and costs for the Ethane Rejection Sensitivity Case:

*Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$85.05 per barrel. The resulting weighted-average price for NGL was \$51.45 per barrel.

*Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month

period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$2.78 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$2.27 per thousand cubic feet.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net possible reserves and present worth attributable to the properties audited, under the aforementioned Ethane Rejection Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Ethane Rejection Sensitivity Case</b>				
	<b>Estimated by Antero</b>				
	<b>Net Possible Reserves and Present Worth at 10 Percent</b>				
	<b>as of December 31, 2012</b>				
	<b>Oil and Condensate (Mbbbl)</b>	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	1,250	20,895	1,064,479	1,197,344	306,668
Not Audited by DeGolyer and MacNaughton	293	4,644	181,431	211,058	32,352
<b>Total Marcellus Possible</b>	<b>1,543</b>	<b>25,539</b>	<b>1,245,910</b>	<b>1,408,402</b>	<b>339,020</b>

Notes:

1. Possible reserves and values for possible reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net possible reserves estimates prepared by us and by Antero for the Ethane Rejection Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.4 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for the Ethane Rejection Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Rejection Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 1.8 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Rejection Sensitivity Case.

DeGolyer and MacNaughton is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1936. DeGolyer and MacNaughton does not have any financial interest, including stock ownership, in Antero. Our fees were not contingent on the results of our evaluation. This letter report has been prepared at the request of Antero. DeGolyer and MacNaughton has used all data, assumptions, procedures, and methods that it considers necessary to prepare this report.

Very truly yours,

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

/s/ Gregory K. Graves, P.E.  
Gregory K. Graves, P.E.  
Senior Vice President

**CERTIFICATE of QUALIFICATION**

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

1. That I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report addressed to Antero dated July 23, 2013, and that I, as Senior Vice President, was responsible for the preparation of this report.
2. That I attended the University of Texas at Austin, and that I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers; and that I have in excess of 28 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.

Senior Vice President

DeGolyer and MacNaughton

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**DeGolyer and MacNaughton**  
5001 Spring Valley Road  
Suite 800 East  
Dallas, Texas 75244

July 23, 2013

Antero Resources Appalachian Corporation  
1625 17th Street  
Suite 300  
Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted an audit of the estimates of net proved crude oil, condensate, natural gas liquids (NGL), and natural gas reserves and present worth, as of December 31, 2012, prepared by the engineering staff of Antero Resources Appalachian Corporation (Antero) for working and royalty interests owned in Ohio. This evaluation was completed on May 15, 2013. Antero has represented that these properties account for 100 percent on a million cubic feet equivalent basis of Antero's net proved reserves in the Utica Shale in the Appalachian basin as of December 31, 2012. Antero has represented to us that these properties account for approximately 2.50 percent on a million cubic feet equivalent basis of Antero's net proved reserves as of December 31, 2012, and that the net proved reserves estimates have been prepared in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of December 31, 2012, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves included herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after December 31, 2012. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others. NGL have been estimated for certain

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properties and are based on the NGL yields provided by Antero and assume recovery of ethane during processing.

Future gross revenue is that revenue which will accrue to the appraised interests from the production and sale of the estimated net reserves. Future net revenue is calculated by deducting production and ad valorem taxes, operating expenses, and capital costs from the future gross revenue. Present worth is defined as future net revenue discounted at a specified arbitrary rate compounded monthly over the expected period of realization.

At the request of Antero, we have prepared an audit of the estimates of net proved oil, condensate, NGL, and natural gas reserves and present worth, as of December 31, 2012, prepared by the engineering staff of Antero for the same properties assuming rejection of ethane during NGL processing, referred to as the "Ethane Rejection Sensitivity Case." As of December 31, 2012, ethane recovery was economic at SEC pricing; by the completion of our audit, however, ethane recovery had become uneconomic. Given the volatility in ethane prices, both ethane recovery and ethane rejection cases were included as of December 31, 2012, to provide comparability between reserves and present worth at 10 percent.

Estimates of oil, condensate, NGL, and natural gas reserves and associated revenue should be regarded only as estimates that may change as further production history and additional information become available. Not only are such reserves and revenue estimates based on that information which is currently available, but such estimates are also subject to the uncertainties inherent in the application of judgmental factors in interpreting such information.

Data used in this audit were obtained from reviews with Antero personnel, Antero files, from records on file with the appropriate regulatory agencies, and from public sources. In the preparation of this report we have relied, without independent verification, upon such information furnished by Antero with respect to property interests, production from such properties, current costs of operation and development, current prices for production, agreements relating to current and future operations and sale of production, and various other information and data that were accepted as represented. A field examination of the properties was not considered necessary for the purposes of this report.

### **Methodology and Procedures**

Estimates of reserves were prepared by the use of appropriate geological and engineering methods that are in accordance with practices generally recognized by the petroleum industry as presented in the publication of the Society of Petroleum Engineers entitled "Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information (Revision as of February 19, 2007)." The

method or combination of methods used in the analysis of each reservoir was tempered by experience with similar reservoirs, stage of development, quality and completeness of basic data, and production history. These assumptions, data, methods, and procedures are considered appropriate for the purpose for which this report has been prepared.

For depletion-type reservoirs or those whose performance disclosed a reliable decline in producing-rate trends or other diagnostic characteristics, reserves were estimated by the application of appropriate decline curves or other performance relationships. In the analyses of production-decline curves, reserves were estimated only to the limits of economic production or to the limit of the production licenses as appropriate.

Petroleum reserves estimated by Antero and by us are classified as proved and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net proved reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero's methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the state in which the interest is located. Condensate reserves estimated herein are those to be recovered by conventional lease separation.

### **Definition of Reserves**

Petroleum reserves estimated by Antero included in this report are classified as proved. Only proved reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the SEC. Reserves are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classified as follows:

*Proved oil and gas reserves* — Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience,

engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and  
(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be



determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

*Developed oil and gas reserves* — Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

- (i) Through existing wells with existing equipment and operating methods or in which the cost of the required

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equipment is relatively minor compared to the cost of a new well; and

- (ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

*Undeveloped oil and gas reserves* — Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

- (i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

- (ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

- (iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in [section 210.4—10 (a) Definitions], or by other evidence using reliable technology establishing reasonable certainty.

#### **Primary Economic Assumptions**

The following economic assumptions were used for estimating existing and future prices and costs:

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#### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$84.47 per barrel. The resulting weighted-average price for NGL was \$28.81 per barrel.

#### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$2.78 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$2.08 per thousand cubic feet.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant's ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the December 31, 2012, estimated oil and gas volumes. The

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reserves estimated in this report can be produced under current regulatory guidelines.

Antero has represented that estimated net proved reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of proved reserves of the SEC. Antero represents that its estimates of the net proved reserves attributable to these properties, which represent 2.50 percent of Antero's total proved reserves on a net equivalent basis, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	Estimated by Antero Net Proved Reserves and Present Worth at 10 Percent as of December 31, 2012				
	Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)
Audited by DeGolyer and MacNaughton	1,311	9,015	61,085	123,039	148,265
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Proved</b>	<b>1,311</b>	<b>9,015</b>	<b>61,085</b>	<b>123,039</b>	<b>148,265</b>

Notes:

1. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
2. Numbers may not add due to rounding.
3. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In our opinion, the information relating to the audited estimated proved reserves, estimated future net revenue from proved reserves, and present worth of estimated future net revenue from proved reserves of oil, condensate, natural gas liquids, and gas contained in this report has been prepared in accordance with Paragraphs 932-235-50-4, 932-235-50-6, 932-235-50-7, 932-235-50-9, 932-235-50-30, and 932-235-50-31(a), (b), and (e) of the Accounting Standards Update 932-235-50, *Extractive Industries — Oil and Gas (Topic 932): Oil and Gas Reserve Estimation and Disclosures* (January 2010) of the Financial Accounting Standards Board and Rules 4—10(a) (1)—(32) of Regulation S—X and Rules 302(b), 1201, 1202(a) (1), (2), (3), (4), (8), and 1203(a) of Regulation S—K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein and (ii) estimates of the proved developed and proved undeveloped reserves are not presented at the beginning of the year.

To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necessarily unable to express an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net proved reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.3 percent when compared on a net gas equivalent basis. It is our opinion that there is no material difference between the net proved reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 0.1 percent overall difference. It is our opinion that there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for those properties we audited.

**Ethane Rejection Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net proved reserves for the Ethane Rejection Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The only adjustments made were to NGL yields and pricing to take into account ethane rejection and natural gas heating value adjustments. The following economic assumptions were used for estimating existing and future prices and costs for the Ethane Rejection Sensitivity Case:

*Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the

end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$84.47 per barrel. The resulting weighted-average price for NGL was \$53.87 per barrel.

#### Natural Gas Prices

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$2.78 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$2.37 per thousand cubic feet.

#### Operating Expenses and Capital Costs

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

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Antero represents that its estimates of the net proved reserves attributable to the properties audited, under the aforementioned Ethane Rejection Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	Ethane Rejection Sensitivity Case				
	Estimated by Antero				
	Net Proved Reserves and Present Worth at 10 Percent as of December 31, 2012				
Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)	
Audited by DeGolyer and MacNaughton	1,311	3,796	69,016	99,655	139,459
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Proved</b>	<b>1,311</b>	<b>3,796</b>	<b>69,016</b>	<b>99,655</b>	<b>139,459</b>

#### Notes:

1. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
2. Numbers may not add due to rounding.
3. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net proved reserves estimates prepared by us and by Antero for the Ethane Rejection Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.2 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net proved reserves estimates prepared by Antero and those prepared by us for the Ethane Rejection Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Rejection Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 0.1 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Rejection Sensitivity Case.

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DeGolyer and MacNaughton is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1936. DeGolyer and MacNaughton does not have any financial interest, including stock ownership, in Antero. Our fees were not contingent on the results of our evaluation. This letter report has been prepared at the request of Antero. DeGolyer and MacNaughton has used all data, assumptions, procedures, and methods that it considers necessary to prepare this report.

Very truly yours,

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

/s/ Gregory K. Graves, P.E.  
Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**CERTIFICATE of QUALIFICATION**

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

1. That I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report addressed to Antero dated July 23, 2013, and that I, as Senior Vice President, was responsible for the preparation of this report.
2. That I attended the University of Texas at Austin, and that I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers; and that I have in excess of 28 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.  
Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**DeGolyer and MacNaughton**  
5001 Spring Valley Road  
Suite 800 East  
Dallas, Texas 75244

July 23, 2013

Antero Resources Appalachian Corporation  
1625 17th Street  
Suite 300  
Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted a reserves audit of the estimates of net probable crude oil, condensate, natural gas liquids (NGL), and natural gas reserves and present worth, as of December 31, 2012, prepared by the engineering staff of Antero Resources Appalachian Corporation (Antero) for working and royalty interests owned in Ohio. This evaluation was completed on May 15, 2013. Antero has represented that these properties account for 100 percent on a million cubic feet equivalent basis of Antero's net probable reserves in the Utica Shale in the Appalachian basin as of December 31, 2012. Antero has represented to us that these properties account for approximately 1.00 percent on a million cubic feet equivalent basis of Antero's net probable reserves as of December 31, 2012, and that the net probable reserves estimates have been prepared in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of December 31, 2012, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves included herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after December 31, 2012. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others. NGL have been estimated for certain

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properties and are based on the NGL yields provided by Antero and assume recovery of ethane during processing.

Future gross revenue is that revenue which will accrue to the appraised interests from the production and sale of the estimated net reserves. Future net revenue is calculated by deducting production and ad valorem taxes, operating expenses, and capital costs from the future gross revenue. Present worth is defined as future net revenue discounted at a specified arbitrary rate compounded monthly over the expected period of realization.

At the request of Antero, we have prepared an audit of the estimates of net probable oil, condensate, NGL, and natural gas reserves and present worth, as of December 31, 2012, prepared by the engineering staff of Antero for the same properties assuming rejection of ethane during NGL processing, referred to as the "Ethane Rejection Sensitivity Case." As of December 31, 2012, ethane recovery was economic at SEC pricing; by the completion of our audit, however, ethane recovery had become uneconomic. Given the volatility in ethane prices, both ethane recovery and ethane rejection cases were included as of December 31, 2012 to provide comparability between reserves and present worth at 10 percent.

Estimates of oil, condensate, NGL, and natural gas reserves and associated revenue should be regarded only as estimates that may change as further production history and additional information become available. Not only are such reserves and revenue estimates based on that information which is currently available, but such estimates are also subject to the uncertainties inherent in the application of judgmental factors in interpreting such information.

Data used in this audit were obtained from reviews with Antero personnel, Antero files, from records on file with the appropriate regulatory agencies, and from public sources. In the preparation of this report we have relied, without independent verification, upon such information furnished by Antero with respect to property interests, production from such properties, current costs of operation and development, current prices for production, agreements relating to current and future operations and sale of production, and various other information and data that were accepted as represented. A field examination of the properties was not considered necessary for the purposes of this report.

### **Methodology and Procedures**

Estimates of reserves were prepared by the use of appropriate geological and engineering methods that are in accordance with practices generally recognized by the petroleum industry as presented in the publication of the Society of Petroleum Engineers entitled "Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information (Revision as of February 19, 2007)." The

method or combination of methods used in the analysis of each reservoir was tempered by experience with similar reservoirs, stage of development, quality and completeness of basic data, and production history. These assumptions, data, methods, and procedures are considered appropriate for the purpose for which this report has been prepared.

For depletion-type reservoirs or those whose performance disclosed a reliable decline in producing-rate trends or other diagnostic characteristics, reserves were estimated by the application of appropriate decline curves or other performance relationships. In the analyses of production-decline curves, reserves were estimated only to the limits of economic production or to the limit of the production licenses as appropriate.

Petroleum reserves estimated by Antero and by us are classified as probable and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net probable reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero's methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the state in which the interest is located. Condensate reserves estimated herein are those to be recovered by conventional lease separation.

### **Definition of Reserves**

Petroleum reserves estimated by Antero included in this report are classified as probable. Only probable reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the SEC. Reserves are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classified as follows:

*Proved oil and gas reserves* — Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience,

engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and  
(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be

determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

*Probable reserves* — Probable reserves are those additional reserves that are less certain to be recovered than proved reserves but which, together with proved reserves, are as likely as not to be recovered.

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(i) When deterministic methods are used, it is as likely as not that actual remaining quantities recovered will exceed the sum of estimated proved plus probable reserves. When probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the proved plus probable reserves estimates.

(ii) Probable reserves may be assigned to areas of a reservoir adjacent to proved reserves where data control or interpretations of available data are less certain, even if the interpreted reservoir continuity of structure or productivity does not meet the reasonable certainty criterion. Probable reserves may be assigned to areas that are structurally higher than the proved area if these areas are in communication with the proved reservoir.

(iii) Probable reserves estimates also include potential incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than assumed for proved reserves.

(iv) See also guidelines in paragraphs (iv) and (vi) of the definition of possible reserves.

*Possible reserves* — Possible reserves are those additional reserves that are less certain to be recovered than probable reserves.

(i) When deterministic methods are used, the total quantities ultimately recovered from a project have a low probability of exceeding proved plus probable plus possible reserves. When probabilistic methods are used, there should be at least a 10% probability that the total quantities ultimately recovered will equal or exceed the proved plus probable plus possible reserves estimates.

(ii) Possible reserves may be assigned to areas of a reservoir adjacent to probable reserves where data control and interpretations of available data are progressively less certain. Frequently, this will be in areas where geoscience and

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engineering data are unable to define clearly the area and vertical limits of commercial production from the reservoir by a defined project.

(iii) Possible reserves also include incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than the recovery quantities assumed for probable reserves.

(iv) The proved plus probable and proved plus probable plus possible reserves estimates must be based on reasonable alternative technical and commercial interpretations within the reservoir or subject project that are clearly documented, including comparisons to results in successful similar projects.

(v) Possible reserves may be assigned where geoscience and engineering data identify directly adjacent portions of a reservoir within the same accumulation that may be separated from proved areas by faults with displacement less than formation thickness or other geological discontinuities and that have not been penetrated by a wellbore, and the registrant believes that such adjacent portions are in communication with the known (proved) reservoir. Possible reserves may be assigned to areas that are structurally higher or lower than the proved area if these areas are in communication with the proved reservoir.

(vi) Pursuant to paragraph (iii) of the proved oil and gas definition, where direct observation has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves should be assigned in the structurally higher portions of the reservoir above the HKO only if the higher contact can be established with reasonable certainty through reliable technology. Portions of the reservoir that do not meet this reasonable certainty criterion may be assigned as probable and possible oil or gas based on reservoir fluid properties and pressure gradient interpretations.

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*Developed oil and gas reserves* — Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

(i) Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and

(ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

*Undeveloped oil and gas reserves* — Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in [section 210.4—10 (a) Definitions], or by other evidence using reliable technology establishing reasonable certainty.

The extent to which probable reserves ultimately may be reclassified as proved reserves is dependent upon future drilling, testing, and well performance.

The degree of risk to be applied in evaluating probable reserves is influenced by economic and technological factors as well as the time element. Probable reserves in this report have not been adjusted in consideration of these additional risks and therefore are not comparable with proved reserves.

#### **Primary Economic Assumptions**

The following economic assumptions were used for estimating existing and future prices and costs:

##### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$84.47 per barrel. The resulting weighted-average price for NGL was \$28.48 per barrel.

##### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$2.78 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$2.08 per thousand cubic feet.

##### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant's ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the December 31, 2012, estimated oil and gas volumes. The reserves estimated in this report can be produced under current regulatory guidelines.

Antero has represented that estimated net probable reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of probable reserves of the SEC. Antero represents that its estimates of the net probable reserves attributable to these properties, which represent 1.00 percent of Antero's total probable reserves on a net equivalent basis, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of



dollars (M\$):

Estimated by Antero  
Net Probable Reserves and Present Worth at 10 Percent  
as of December 31, 2012

	Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)
Audited by DeGolyer and MacNaughton	1,225	10,987	75,071	148,343	125,520
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Probable</b>	<b>1,225</b>	<b>10,987</b>	<b>75,071</b>	<b>148,343</b>	<b>125,520</b>

Notes:

1. Probable reserves and values for probable reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

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In our opinion, the information relating to the audited estimated probable reserves, estimated future net revenue from probable reserves, and present worth of estimated future net revenue from probable reserves of oil, condensate, natural gas liquids, and gas contained in this report has been prepared in accordance with Rules 4—10(a) (1)—(32) of Regulation S—X and Rules 302(b), 1201, 1202(a) (1), (2), (3), (4), (5), and (8) of Regulation S—K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein and (ii) estimates of the probable developed and probable undeveloped reserves are not presented at the beginning of the year.

To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necessarily unable to express an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net probable reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.4 percent when compared on a net gas equivalent basis. It is our opinion that there is no material difference between the net probable reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 0.7 percent overall difference. It is our opinion that there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for those properties we audited.

### Ethane Rejection Sensitivity Case

The aforementioned methodology and procedures were used to determine estimates of net probable reserves for the Ethane Rejection Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital

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costs, or abandonment costs. The only adjustments made were to NGL yields and pricing to take into account ethane rejection and natural gas heating value adjustments. The following economic assumptions were used for estimating existing and future prices and costs for the Ethane Rejection Sensitivity Case:

#### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$84.47 per barrel. The resulting weighted-average price for NGL was \$54.12 per barrel.

#### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were

calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$2.78 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$2.37 per thousand cubic feet.

*Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net probable reserves attributable to the properties audited, under the aforementioned Ethane Rejection Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

**Ethane Rejection Sensitivity Case  
Estimated by Antero  
Net Probable Reserves and Present Worth at 10 Percent  
as of December 31, 2012**

	<b>Oil and Condensate (Mbbbl)</b>	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	1,225	4,509	84,921	119,328	116,964
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Probable</b>	<b>1,225</b>	<b>4,509</b>	<b>84,921</b>	<b>119,328</b>	<b>116,964</b>

Notes:

1. Probable reserves and values for probable reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net probable reserves estimates prepared by us and by Antero for the Ethane Rejection Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.8 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net probable reserves estimates prepared by Antero and those prepared by us for the Ethane Rejection Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Rejection Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 0.8 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Rejection Sensitivity Case.

DeGolyer and MacNaughton is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1936. DeGolyer and MacNaughton does not have any financial interest, including stock ownership, in Antero. Our fees were not contingent on the results of our evaluation. This letter report has been prepared at the request of Antero. DeGolyer and MacNaughton has used all data, assumptions, procedures, and methods that it considers necessary to prepare this report.

Very truly yours,

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

/s/ Gregory K. Graves, P.E.  
Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**CERTIFICATE of QUALIFICATION**

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

1. That I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report addressed to Antero dated July 23, 2013, and that I, as Senior Vice President, was responsible for the preparation of this report.
2. That I attended the University of Texas at Austin, and that I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers; and that I have in excess of 28 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.

Senior Vice President

DeGolyer and MacNaughton

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**DeGolyer and MacNaughton**  
5001 Spring Valley Road  
Suite 800 East  
Dallas, Texas 75244

July 23, 2013

Antero Resources Appalachian Corporation  
1625 17th Street  
Suite 300  
Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted a reserves audit of the estimates of net possible crude oil, condensate, natural gas liquids (NGL), and natural gas reserves and present worth, as of December 31, 2012, prepared by the engineering staff of Antero Resources Appalachian Corporation (Antero) for working and royalty interests owned in Ohio. This evaluation was completed on May 15, 2013. Antero has represented that these properties account for 85 percent on a million cubic feet equivalent basis of Antero's net possible reserves in the Utica Shale in the Appalachian basin as of December 31, 2012. Antero has represented to us that these properties account for approximately 63.53 percent on a million cubic feet equivalent basis of Antero's net possible reserves as of December 31, 2012, and that the net possible reserves estimates have been prepared in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of December 31, 2012, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves included herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after December 31, 2012. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others. NGL have been estimated for certain

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properties and are based on the NGL yields provided by Antero and assume recovery of ethane during processing.

Future gross revenue is that revenue which will accrue to the appraised interests from the production and sale of the estimated net reserves. Future net revenue is calculated by deducting production and ad valorem taxes, operating expenses, and capital costs from the future gross revenue. Present worth is defined as future net revenue discounted at a specified arbitrary rate compounded monthly over the expected period of realization.

At the request of Antero, we have prepared an audit of the estimates of net possible oil, condensate, NGL, and natural gas reserves and present worth, as of December 31, 2012, prepared by the engineering staff of Antero for the same properties assuming rejection of ethane during NGL processing, referred to as the "Ethane Rejection Sensitivity Case." As of December 31, 2012, ethane recovery was economic at SEC pricing; by the completion of our audit, however, ethane recovery had become uneconomic. Given the volatility in ethane prices, both ethane recovery and ethane rejection cases were included as of December 31, 2012, to provide comparability between reserves and present worth at 10 percent.

Estimates of oil, condensate, NGL, and natural gas reserves and associated revenue should be regarded only as estimates that may change as further production history and additional information become available. Not only are such reserves and revenue estimates based on that information which is currently available, but such estimates are also subject to the uncertainties inherent in the application of judgmental factors in interpreting such information.

Data used in this audit were obtained from reviews with Antero personnel, Antero files, from records on file with the appropriate regulatory agencies, and from public sources. In the preparation of this report we have relied, without independent verification, upon such information furnished by Antero with respect to property interests, production from such properties, current costs of operation and development, current prices for production, agreements relating to current and future operations and sale of production, and various other information and data that were accepted as represented. A field examination of the properties was not considered necessary for the purposes of this report.

### **Methodology and Procedures**

Estimates of reserves were prepared by the use of appropriate geological and engineering methods that are in accordance with practices generally recognized by the petroleum industry as presented in the publication of the Society of Petroleum Engineers entitled "Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information (Revision as of February 19, 2007)." The

method or combination of methods used in the analysis of each reservoir was tempered by experience with similar reservoirs, stage of development, quality and completeness of basic data, and production history. These assumptions, data, methods, and procedures are considered appropriate for the purpose for which this report has been prepared.

For depletion-type reservoirs or those whose performance disclosed a reliable decline in producing-rate trends or other diagnostic characteristics, reserves were estimated by the application of appropriate decline curves or other performance relationships. In the analyses of production-decline curves, reserves were estimated only to the limits of economic production or to the limit of the production licenses as appropriate.

Petroleum reserves estimated by Antero and by us are classified as possible and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net possible reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero's methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the state in which the interest is located. Condensate reserves estimated herein are those to be recovered by conventional lease separation.

### **Definition of Reserves**

Petroleum reserves estimated by Antero included in this report are classified as possible. Only possible reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the SEC. Reserves are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classified as follows:

*Proved oil and gas reserves* — Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience,

engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and  
(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be

determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

*Probable reserves* — Probable reserves are those additional reserves that are less certain to be recovered than proved reserves but which, together with proved reserves, are as likely as not to be recovered.

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(i) When deterministic methods are used, it is as likely as not that actual remaining quantities recovered will exceed the sum of estimated proved plus probable reserves. When probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the proved plus probable reserves estimates.

(ii) Probable reserves may be assigned to areas of a reservoir adjacent to proved reserves where data control or interpretations of available data are less certain, even if the interpreted reservoir continuity of structure or productivity does not meet the reasonable certainty criterion. Probable reserves may be assigned to areas that are structurally higher than the proved area if these areas are in communication with the proved reservoir.

(iii) Probable reserves estimates also include potential incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than assumed for proved reserves.

(iv) See also guidelines in paragraphs (iv) and (vi) of the definition of possible reserves.

*Possible reserves* — Possible reserves are those additional reserves that are less certain to be recovered than probable reserves.

(i) When deterministic methods are used, the total quantities ultimately recovered from a project have a low probability of exceeding proved plus probable plus possible reserves. When probabilistic methods are used, there should be at least a 10% probability that the total quantities ultimately recovered will equal or exceed the proved plus probable plus possible reserves estimates.

(ii) Possible reserves may be assigned to areas of a reservoir adjacent to probable reserves where data control and interpretations of available data are progressively less certain. Frequently, this will be in areas where geoscience and

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engineering data are unable to define clearly the area and vertical limits of commercial production from the reservoir by a defined project.

(iii) Possible reserves also include incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than the recovery quantities assumed for probable reserves.

(iv) The proved plus probable and proved plus probable plus possible reserves estimates must be based on reasonable alternative technical and commercial interpretations within the reservoir or subject project that are clearly documented, including comparisons to results in successful similar projects.

(v) Possible reserves may be assigned where geoscience and engineering data identify directly adjacent portions of a reservoir within the same accumulation that may be separated from proved areas by faults with displacement less than formation thickness or other geological discontinuities and that have not been penetrated by a wellbore, and the registrant believes that such adjacent portions are in communication with the known (proved) reservoir. Possible reserves may be assigned to areas that are structurally higher or lower than the proved area if these areas are in communication with the proved reservoir.

(vi) Pursuant to paragraph (iii) of the proved oil and gas definition, where direct observation has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves should be assigned in the structurally higher portions of the reservoir above the HKO only if the higher contact can be established with reasonable certainty through reliable technology. Portions of the reservoir that do not meet this reasonable certainty criterion may be assigned as probable and possible oil or gas based on reservoir fluid properties and pressure gradient interpretations.

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*Developed oil and gas reserves* — Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

(i) Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and

(ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction

is by means not involving a well.

*Undeveloped oil and gas reserves* — Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in [section 210.4—10 (a) Definitions], or by other evidence using reliable technology establishing reasonable certainty.

The extent to which possible reserves ultimately may be reclassified as proved reserves is dependent upon future drilling, testing, and well performance.

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The degree of risk to be applied in evaluating possible reserves is influenced by economic and technological factors as well as the time element. Possible reserves in this report have not been adjusted in consideration of these additional risks and therefore are not comparable with proved reserves.

#### **Primary Economic Assumptions**

The following economic assumptions were used for estimating existing and future prices and costs:

##### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$84.47 per barrel. The resulting weighted-average price for NGL was \$25.56 per barrel.

##### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic Columbia Gas Transmission Appalachia index pricing average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$2.78 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$2.13 per thousand cubic feet.

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##### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant's ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the December 31, 2012, estimated oil and gas volumes. The reserves estimated in this report can be produced under current regulatory guidelines.

Antero has represented that estimated net possible reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of possible reserves of the SEC. Antero represents that its estimates of the net possible reserves attributable to these properties, which represent 63.53 percent of Antero's total possible reserves in the Utica Shale on a net equivalent basis, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

Estimated by Antero

**Net Possible Reserves and Present Worth at 10 Percent  
as of December 31, 2012**

	<b>Oil and Condensate (Mbbbl)</b>	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	20,765	267,717	2,274,969	4,005,860	2,491,384
Not Audited by DeGolyer and MacNaughton	8,667	44,994	381,674	703,643	284,221
<b>Total Utica Possible Reserves</b>	<b>29,432</b>	<b>312,711</b>	<b>2,656,643</b>	<b>4,709,503</b>	<b>2,775,605</b>

Notes:

1. Possible reserves and values for possible reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In our opinion, the information relating to the audited estimated possible reserves, estimated future net revenue from possible reserves, and present worth of estimated future net revenue from possible reserves of oil, condensate, natural gas liquids, and gas contained in this report has been prepared in accordance with Rules 4—10(a) (1)—(32) of Regulation S—X and Rules 302(b), 1201, 1202(a) (1), (2), (3), (4), (5), and (8) of Regulation S—K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein and (ii) estimates of possible developed and possible undeveloped reserves are not presented at the beginning of the year.

To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necessarily unable to express an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net possible reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.4 percent when compared on a net gas equivalent basis. It is our opinion that there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 1.3 percent overall difference. It is our opinion that there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for those properties we audited.

**Ethane Rejection Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net possible reserves for the Ethane Rejection Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital

costs, or abandonment costs. The only adjustments made were to NGL yields and pricing to take into account ethane rejection and natural gas heating value adjustments. The following economic assumptions were used for estimating existing and future prices and costs for the Ethane Rejection Sensitivity Case:

*Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$84.47 per barrel. The resulting weighted-average price for NGL was \$51.84 per barrel.

*Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$2.78 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$2.40 per thousand cubic feet.



## Operating Expenses and Capital Costs

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

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Antero represents that its estimates of the net possible reserves and present worth attributable to the properties audited, under the aforementioned Ethane Rejection Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	Ethane Rejection Sensitivity Case				
	Estimated by Antero				
	Net Possible Reserves and Present Worth at 10 Percent				
	as of December 31, 2012				
	Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)
Audited by DeGolyer and MacNaughton	20,527	97,010	2,547,761	3,252,985	2,272,984
Not Audited by DeGolyer and MacNaughton	8,904	17,835	408,522	568,957	266,997
<b>Total Utica Possible Reserves</b>	<b>29,431</b>	<b>114,845</b>	<b>2,956,283</b>	<b>3,821,942</b>	<b>2,539,981</b>

### Notes:

1. Possible reserves and values for possible reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net possible reserves estimates prepared by us and by Antero for the Ethane Rejection Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.4 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for the Ethane Rejection Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Rejection Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 1 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Rejection Sensitivity Case.

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DeGolyer and MacNaughton is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1936. DeGolyer and MacNaughton does not have any financial interest, including stock ownership, in Antero. Our fees were not contingent on the results of our evaluation. This letter report has been prepared at the request of Antero. DeGolyer and MacNaughton has used all data, assumptions, procedures, and methods that it considers necessary to prepare this report.

Very truly yours,

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.

Senior Vice President

DeGolyer and MacNaughton

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**CERTIFICATE of QUALIFICATION**

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

1. That I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report addressed to Antero dated July 23, 2013, and that I, as Senior Vice President, was responsible for the preparation of this report.
2. That I attended the University of Texas at Austin, and that I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers; and that I have in excess of 28 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

**DeGolyer and MacNaughton**  
5001 Spring Valley Road  
Suite 800 East  
Dallas, Texas 75244

July 24, 2013

Antero Resources Appalachian Corporation  
1625 17th Street  
Suite 300  
Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted an audit of the estimates of net proved crude oil, condensate, natural gas liquids (NGL), and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero Resources Appalachian Corporation (Antero) for working and royalty interests owned in Pennsylvania and West Virginia. This evaluation was completed on July 24, 2013. Antero has represented that these properties account for 99.86 percent on a million cubic feet equivalent basis of Antero's net proved reserves in the Marcellus Shale in the Appalachian basin as of June 30, 2013. Antero has represented to us that these properties account for approximately 94.73 percent on a million cubic feet equivalent basis of Antero's net proved reserves as of June 30, 2013, and that the net proved reserves estimates have been prepared in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of June 30, 2013, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves included herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after June 30, 2013. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others. NGL have been estimated for certain properties and are

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based on the NGL yields provided by Antero and assume rejection of ethane during processing.

Future gross revenue is that revenue which will accrue to the appraised interests from the production and sale of the estimated net reserves. Future net revenue is calculated by deducting production and ad valorem taxes, operating expenses, and capital costs from the future gross revenue. Present worth is defined as future net revenue discounted at a specified arbitrary rate compounded monthly over the expected period of realization.

At the request of Antero, we have prepared an audit of the estimates of net proved oil, condensate, NGL, and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties assuming recovery of ethane during NGL processing, referred to as the "Ethane Recovery Sensitivity Case." Given the volatility in ethane prices, both ethane rejection and ethane recovery cases were included as of June 30, 2013, to provide comparability between reserves and present worth at 10 percent. Additionally, at the request of Antero, we have prepared an audit of the estimates of net proved oil, condensate, NGL, and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties for the ethane rejection and ethane recovery cases at forecast prices, referred to as the "Ethane Rejection Forecast Price Sensitivity Case" and the "Ethane Recovery Forecast Price Sensitivity Case," respectively.

Estimates of oil, condensate, NGL, and natural gas reserves and associated revenue should be regarded only as estimates that may change as further production history and additional information become available. Not only are such reserves and revenue estimates based on that information which is currently available, but such estimates are also subject to the uncertainties inherent in the application of judgmental factors in interpreting such information.

Data used in this audit were obtained from reviews with Antero personnel, Antero files, from records on file with the appropriate regulatory agencies, and from public sources. In the preparation of this report we have relied, without independent verification, upon such information furnished by Antero with respect to property interests, production from such properties, current costs of operation and development, current prices for production, agreements relating to current and future operations and sale of production, and various other information and data

that were accepted as represented. A field examination of the properties was not considered necessary for the purposes of this report.

**Methodology and Procedures**

Estimates of reserves were prepared by the use of appropriate geological and engineering methods that are in accordance with practices generally recognized by the petroleum industry as presented in the publication of the Society of Petroleum Engineers entitled "Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information (Revision as of February 19, 2007)." The method or combination of methods used in the analysis of each reservoir was tempered by experience with similar reservoirs, stage of development, quality and completeness of basic data, and production history. These assumptions, data, methods, and procedures are considered appropriate for the purpose for which this report has been prepared.

For depletion-type reservoirs or those whose performance disclosed a reliable decline in producing-rate trends or other diagnostic characteristics, reserves were estimated by the application of appropriate decline curves or other performance relationships. In the analyses of production-decline curves, reserves were estimated only to the limits of economic production or to the limit of the production licenses as appropriate.

Petroleum reserves estimated by Antero and by us are classified as proved and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net proved reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero's methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the

state in which the interest is located. Condensate reserves estimated herein are those to be recovered by conventional lease separation.

#### **Definition of Reserves**

Petroleum reserves estimated by Antero included in this report are classified as proved. Only proved reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the SEC. Reserves are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classified as follows:

*Proved oil and gas reserves* — Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience, engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable

technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and  
(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

*Developed oil and gas reserves* — Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

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(i) Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and

(ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

*Undeveloped oil and gas reserves* — Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in [section 210.4—10 (a) Definitions], or by other evidence using reliable technology establishing reasonable certainty.

### **Primary Economic Assumptions**

The following economic assumptions were used for estimating existing and future prices and costs:

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#### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$81.65 per barrel. The resulting weighted-average price for NGL was \$45.66 per barrel.

#### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$3.01 per thousand cubic feet.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant's ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the June 30, 2013, estimated oil and gas volumes. The

reserves estimated in this report can be produced under current regulatory guidelines.

Antero has represented that estimated net proved reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of proved reserves of the SEC. Antero represents that its estimates of the net proved reserves attributable to these properties, which represent 94.73 percent of Antero's total proved reserves on a net equivalent basis, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	Estimated by Antero Net Proved Reserves and Present Worth at 10 Percent as of June 30, 2013				
	Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)
Audited by DeGolyer and MacNaughton	3,017	77,191	5,469,181	5,950,423	3,933,059
Not Audited by DeGolyer and MacNaughton	0	0	8,222	8,222	6,546
<b>Total Marcellus Proved</b>	<b>3,017</b>	<b>77,191</b>	<b>5,477,403</b>	<b>5,958,645</b>	<b>3,939,605</b>

Notes:

1. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
2. Numbers may not add due to rounding.
3. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In our opinion, the information relating to estimated proved reserves, estimated future net revenue from proved reserves, and present worth of estimated future net revenue from proved reserves of oil, condensate, natural gas liquids, and gas contained in this report has been prepared in accordance with Paragraphs 932-235-50-4, 932-235-50-6, 932-235-50-7, 932-235-50-9, 932-235-50-30, and 932-235-50-31(a), (b), and (e) of the Accounting Standards Update 932-235-50, *Extractive Industries — Oil and Gas (Topic 932): Oil and Gas Reserve Estimation and Disclosures* (January 2010) of the Financial Accounting Standards Board and Rules 4—10(a) (1)—(32) of Regulation S—X and Rules 302(b), 1201, 1202(a) (1), (2), (3), (4), (5), (8), and 1203(a) of Regulation S—K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein, (ii) estimates of the proved developed and proved undeveloped reserves are not presented at the beginning of the year, and (iii) the effective date of this report does not coincide with Antero's fiscal year.

To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necessarily unable to express an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net proved reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.53 percent when compared on a net gas equivalent basis. It is our opinion that there is no material difference between the net proved reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 4.47 percent overall difference. It is our opinion that there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for those properties we audited.

#### Ethane Recovery Sensitivity Case

The aforementioned methodology and procedures were used to determine estimates of net proved reserves for the Ethane Recovery Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The only adjustments made were to NGL yields and pricing to take into account ethane recovery and natural gas heating value adjustments. The following economic assumptions were used for estimating existing and future prices and costs for the Ethane Recovery Sensitivity Case:

##### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the

end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$81.65 per barrel. The resulting weighted-average price for NGL was \$17.82 per barrel.

#### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$3.00 per thousand cubic feet.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

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Antero represents that its estimates of the net proved reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	Ethane Recovery Sensitivity Case				
	Estimated by Antero				
	Net Proved Reserves and Present Worth at 10 Percent as of June 30, 2013				
Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)	
Audited by DeGolyer and MacNaughton	3,015	241,211	5,214,773	6,680,132	3,736,364
Not Audited by DeGolyer and MacNaughton	0	0	8,222	8,222	6,546
<b>Total Marcellus Proved</b>	<b>3,015</b>	<b>241,211</b>	<b>5,222,995</b>	<b>6,688,354</b>	<b>3,742,910</b>

#### Notes:

1. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
2. Numbers may not add due to rounding.
3. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net proved reserves estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 1.38 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net proved reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 2.47 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case.

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#### **Ethane Rejection Forecast Price Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net proved reserves for the Ethane Rejection Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane rejection. The following economic assumptions were used for estimating future prices and costs for the Ethane Rejection Forecast Price Sensitivity Case:

#### *Oil, Condensate, NGL, and Natural Gas Prices*

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

Date	Oil, Condensate, and NGL (\$/bbl)	Natural Gas (\$/MMBtu)
2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90
2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for oil, condensate, and NGL and \$3.86 per MMBtu for natural gas. Oil and condensate prices were adjusted for gravity and local differential based on information provided by Antero. NGL price adjustments were provided by Antero and assume rejection of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price for oil and condensate was \$72.06 per barrel, \$37.93 per barrel of NGL, and \$3.76 per thousand cubic feet of gas.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs

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required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net proved reserves and present worth attributable to the properties audited, under the aforementioned Ethane Rejection Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	Ethane Rejection Forecast Price Sensitivity Case				
	Estimated by Antero Net Proved Reserves and Present Worth at 10 Percent as of June 30, 2013				
	Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)
Audited by DeGolyer and MacNaughton	3,018	77,269	5,481,233	5,962,954	5,086,120
Not Audited by DeGolyer and MacNaughton	0	0	8,685	8,685	8,543
<b>Total Marcellus Proved</b>	<b>3,018</b>	<b>77,269</b>	<b>5,489,918</b>	<b>5,971,639</b>	<b>5,094,663</b>

#### Notes:

1. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
2. Numbers may not add due to rounding.
3. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net proved reserves estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.53 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net proved reserves estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 4.27 percent overall difference. It is our opinion that for the audited properties there is no material

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difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case.



## Ethane Recovery Forecast Price Sensitivity Case

The aforementioned methodology and procedures were used to determine estimates of net proved reserves for the Ethane Recovery Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane recovery. The following economic assumptions were used for estimating future prices and costs for the Ethane Recovery Forecast Sensitivity Price Case:

### *Oil, Condensate, NGL, and Natural Gas Prices*

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

<u>Date</u>	<u>Oil, Condensate, and NGL (\$/bbl)</u>	<u>Natural Gas (\$/MMBtu)</u>
2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90
2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for oil, condensate, and NGL and \$3.86 per MMBtu for natural gas. Oil and condensate prices were adjusted for gravity and local differential based on information provided by Antero. NGL price adjustments were provided by Antero and assume recovery of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price for oil and condensate was \$72.06 per barrel, \$15.43 per barrel of NGL, and \$3.75 per thousand cubic feet of gas.

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### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net proved reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<u>Ethane Recovery Forecast Price Sensitivity Case</u>				
	<u>Estimated by Antero</u>				
	<u>Net Proved Reserves and Present Worth at 10 Percent</u>				
	<u>as of June 30, 2013</u>				
	<u>Oil and Condensate (Mbbbl)</u>	<u>Natural Gas Liquids (Mbbbl)</u>	<u>Natural Gas (MMcf)</u>	<u>Gas Equivalent (MMcfe)</u>	<u>Present Worth at 10 Percent (M\$)</u>
Audited by DeGolyer and MacNaughton	3,016	241,449	5,226,215	6,693,008	4,764,822
Not Audited by DeGolyer and MacNaughton	0	0	8,685	8,685	8,543
<b>Total Marcellus Proved</b>	<b>3,016</b>	<b>241,449</b>	<b>5,234,900</b>	<b>6,701,693</b>	<b>4,773,365</b>

#### Notes:

- Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
- Numbers may not add due to rounding.
- Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net proved reserves estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 1.38 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net proved reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive

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and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 2.50 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Recovery Forecast Price Sensitivity Case.

DeGolyer and MacNaughton is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1936. DeGolyer and MacNaughton does not have any financial interest, including stock ownership, in Antero. Our fees were not contingent on the results of our evaluation. This letter report has been prepared at the request of Antero. DeGolyer and MacNaughton has used all data, assumptions, procedures, and methods that it considers necessary to prepare this report.

Very truly yours,

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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#### **CERTIFICATE of QUALIFICATION**

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

1. That I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report addressed to Antero dated July 24, 2013, and that I, as Senior Vice President, was responsible for the preparation of this report.
2. That I attended the University of Texas at Austin, and that I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers; and that I have in excess of 28 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**DeGolyer and MacNaughton**  
5001 Spring Valley Road  
Suite 800 East  
Dallas, Texas 75244

July 24, 2013

Antero Resources Appalachian Corporation  
1625 17th Street  
Suite 300  
Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted an audit of the estimates of net probable crude oil, condensate, natural gas liquids (NGL), and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero Resources Appalachian Corporation (Antero) for working and royalty interests owned in Pennsylvania and West Virginia. This evaluation was completed on July 24, 2013. Antero has represented that these properties account for 100 percent on a million cubic feet equivalent basis of Antero's net probable reserves in the Marcellus Shale in the Appalachian basin as of June 30, 2013. Antero has represented to us that these properties account for approximately 84.03 percent on a million cubic feet equivalent basis of Antero's net probable reserves as of June 30, 2013, and that the net probable reserves estimates have been prepared in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of June 30, 2013, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves included herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after June 30, 2013. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others. NGL have been estimated for certain properties and are

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based on the NGL yields provided by Antero and assume rejection of ethane during processing.

Future gross revenue is that revenue which will accrue to the appraised interests from the production and sale of the estimated net reserves. Future net revenue is calculated by deducting production and ad valorem taxes, operating expenses, and capital costs from the future gross revenue. Present worth is defined as future net revenue discounted at a specified arbitrary rate compounded monthly over the expected period of realization.

At the request of Antero, we have prepared an audit of the estimates of net probable oil, condensate, NGL, and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties assuming recovery of ethane during NGL processing, referred to as the "Ethane Recovery Sensitivity Case." Given the volatility in ethane prices, both ethane rejection and ethane recovery cases were included as of June 30, 2013, to provide comparability between reserves and present worth at 10 percent. Additionally, at the request of Antero, we have prepared an audit of the estimates of net probable oil, condensate, NGL, and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties for the ethane rejection and ethane recovery cases at forecast prices, referred to as the "Ethane Rejection Forecast Price Sensitivity Case" and the "Ethane Recovery Forecast Price Sensitivity Case," respectively.

Estimates of oil, condensate, NGL, and natural gas reserves and associated revenue should be regarded only as estimates that may change as further production history and additional information become available. Not only are such reserves and revenue estimates based on that information which is currently available, but such estimates are also subject to the uncertainties inherent in the application of judgmental factors in interpreting such information.

Data used in this audit were obtained from reviews with Antero personnel, Antero files, from records on file with the appropriate regulatory agencies, and from public sources. In the preparation of this report we have relied, without independent verification, upon such information furnished by Antero with respect to property interests, production from such properties, current costs of operation and development, current prices for production, agreements relating to current and future operations and sale of production, and various other information and data

that were accepted as represented. A field examination of the properties was not considered necessary for the purposes of this report.

**Methodology and Procedures**

Estimates of reserves were prepared by the use of appropriate geological and engineering methods that are in accordance with practices generally recognized by the petroleum industry as presented in the publication of the Society of Petroleum Engineers entitled "Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information (Revision as of February 19, 2007)." The method or combination of methods used in the analysis of each reservoir was tempered by experience with similar reservoirs, stage of development, quality and completeness of basic data, and production history. These assumptions, data, methods, and procedures are considered appropriate for the purpose for which this report has been prepared.

For depletion-type reservoirs or those whose performance disclosed a reliable decline in producing-rate trends or other diagnostic characteristics, reserves were estimated by the application of appropriate decline curves or other performance relationships. In the analyses of production-decline curves, reserves were estimated only to the limits of economic production or to the limit of the production licenses as appropriate.

Petroleum reserves estimated by Antero and by us are classified as probable and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net probable reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero's methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the

state in which the interest is located. Condensate reserves estimated herein are those to be recovered by conventional lease separation.

#### **Definition of Reserves**

Petroleum reserves estimated by Antero included in this report are classified as probable. Only probable reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the SEC. Reserves are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classified as follows:

*Proved oil and gas reserves* — Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience, engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable

technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and  
(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

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*Probable reserves* — Probable reserves are those additional reserves that are less certain to be recovered than proved reserves but which, together with proved reserves, are as likely as not to be recovered.

(i) When deterministic methods are used, it is as likely as not that actual remaining quantities recovered will exceed the sum of estimated proved plus probable reserves. When probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the proved plus probable reserves estimates.

(ii) Probable reserves may be assigned to areas of a reservoir adjacent to proved reserves where data control or interpretations of available data are less certain, even if the interpreted reservoir continuity of structure or productivity does not meet the reasonable certainty criterion. Probable reserves may be assigned to areas that are structurally higher than the proved area if these areas are in communication with the proved reservoir.

(iii) Probable reserves estimates also include potential incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than assumed for proved reserves.

(iv) See also guidelines in paragraphs (iv) and (vi) of the definition of possible reserves.

*Possible reserves* — Possible reserves are those additional reserves that are less certain to be recovered than probable reserves.

(i) When deterministic methods are used, the total quantities ultimately recovered from a project have a low probability of exceeding proved plus probable plus possible reserves. When probabilistic methods are used, there should be at least a 10% probability that the total quantities ultimately recovered will equal or exceed the proved plus probable plus possible reserves estimates.

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(ii) Possible reserves may be assigned to areas of a reservoir adjacent to probable reserves where data control and interpretations of available data are progressively less certain. Frequently, this will be in areas where geoscience and engineering data are unable to define clearly the area and vertical limits of commercial production from the reservoir by a defined project.

(iii) Possible reserves also include incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than the recovery quantities assumed for probable reserves.

(iv) The proved plus probable and proved plus probable plus possible reserves estimates must be based on reasonable alternative technical and commercial interpretations within the reservoir or subject project that are clearly documented, including comparisons to results in successful similar projects.

(v) Possible reserves may be assigned where geoscience and engineering data identify directly adjacent portions of a reservoir within the same accumulation that may be separated from proved areas by faults with displacement less than formation thickness or other geological discontinuities and that have not been penetrated by a wellbore, and the registrant believes that such adjacent portions are in communication with the known (proved) reservoir. Possible reserves may be assigned to areas that are structurally higher or lower than the proved area if these areas are in communication with the proved reservoir.

(vi) Pursuant to paragraph (iii) of the proved oil and gas definition, where direct observation has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves should be assigned in the structurally higher portions of the reservoir above the HKO only if the higher contact can be established with reasonable certainty through reliable technology. Portions of the reservoir that do not meet this reasonable certainty criterion may be

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assigned as probable and possible oil or gas based on reservoir fluid properties and pressure gradient interpretations.

*Developed oil and gas reserves* — Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

(i) Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and

(ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

*Undeveloped oil and gas reserves* — Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in [section 210.4—10 (a) Definitions], or by other evidence using reliable technology establishing reasonable certainty.

The extent to which probable reserves ultimately may be reclassified as proved reserves is dependent upon future drilling, testing, and well performance. The degree of risk to be applied in evaluating probable reserves is influenced by economic and technological factors as well as the time element. Probable reserves in this report have not been adjusted in consideration of these additional risks and therefore are not comparable with proved reserves.

#### **Primary Economic Assumptions**

The following economic assumptions were used for estimating existing and future prices and costs:

##### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$81.65 per barrel. The resulting weighted-average price for NGL was \$46.98 per barrel.

##### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$3.09 per thousand cubic feet.

##### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant's ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the June 30, 2013, estimated oil and gas volumes. The reserves estimated in this report can be produced under current regulatory guidelines.

Antero has represented that estimated net probable reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of probable reserves of the SEC. Antero represents that its estimates of the net probable reserves attributable to these properties, which represent 84.03 percent of Antero's total probable reserves on a net equivalent basis, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

Estimated by Antero  
Net Probable Reserves and Present Worth at 10 Percent  
as of June 30, 2013

	Oil and Condensate (Mbbl)	Natural Gas Liquids (Mbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (MS)
Audited by DeGolyer and MacNaughton	35,554	342,741	9,526,693	11,796,461	7,036,335
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Marcellus Probable</b>	<b>35,554</b>	<b>342,741</b>	<b>9,526,693</b>	<b>11,796,461</b>	<b>7,036,335</b>

Notes:

1. Probable reserves and values for probable reserves have not been risk adjust to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In our opinion, the information relating to estimated probable reserves, estimated future net revenue from probable reserves, and present worth of estimated future net revenue from probable reserves of oil, condensate, natural gas liquids, and gas contained in this report has been prepared in accordance with Paragraphs 932-235-50-4, 932-235-50-6, 932-235-50-7, 932-235-50-9, 932-235-50-30, and 932-235-50-31(a), (b), and (c) of the Accounting Standards Update 932-235-50, *Extractive Industries — Oil and Gas (Topic 932): Oil and Gas Reserve Estimation and Disclosures* (January 2010) of the Financial Accounting Standards Board and Rules 4—10(a) (1)—(32) of Regulation S—X and Rules 302(b), 1201, 1202(a) (1), (2), (3), (4), (5), (8), and 1203(a) of Regulation S—K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein, (ii) estimates of the probable developed and probable undeveloped reserves are not presented at the beginning of the year, and (iii) the effective date of this report does not coincide with Antero's fiscal year.

To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necessarily unable to express an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net probable reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.27 percent when compared on a net gas equivalent basis. It is our opinion that there is no material difference between the net probable reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 4.70 percent overall difference. It is our opinion that there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for those properties we audited.

### Ethane Recovery Sensitivity Case

The aforementioned methodology and procedures were used to determine estimates of net probable reserves for the Ethane Recovery Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The only adjustments made were to NGL yields and pricing to take into account ethane recovery and natural gas heating value adjustments. The following economic assumptions were used for estimating existing and future prices and costs for the Ethane Recovery Sensitivity Case:

#### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$81.65 per barrel. The resulting weighted-average price for NGL was \$21.54 per barrel.

#### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were

calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$3.06 per thousand cubic feet.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs

required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net probable reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbb), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Ethane Recovery Sensitivity Case</b>				
	<b>Estimated by Antero</b>				
	<b>Net Probable Reserves and Present Worth at 10 Percent as of June 30, 2013</b>				
<b>Oil and Condensate (Mbb)</b>	<b>Natural Gas Liquids (Mbb)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>	
Audited by DeGolyer and MacNaughton	35,564	868,609	8,709,626	14,134,555	6,545,633
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Marcellus Probable</b>	<b>35,564</b>	<b>868,609</b>	<b>8,709,626</b>	<b>14,134,555</b>	<b>6,545,633</b>

#### Notes:

1. Probable reserves and values for probable reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net probable reserves estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.00 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net probable reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in

total, for the properties reviewed, resulting in a 2.37 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case.

#### **Ethane Rejection Forecast Price Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net probable reserves for the Ethane Rejection Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane rejection. The following economic assumptions were used for estimating future prices and costs for the Ethane Rejection Forecast Price Sensitivity Case:

#### *Oil, Condensate, NGL, and Natural Gas Prices*

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

<b>Date</b>	<b>Oil, Condensate, and NGL (\$/bbl)</b>	<b>Natural Gas (\$/MMBtu)</b>
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2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90
2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for oil, condensate, and NGL and \$3.86 per MMBtu for natural gas. Oil and condensate prices were adjusted for gravity and local differential based on information provided by Antero. NGL price adjustments were provided by Antero and assume rejection of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price for oil and condensate was \$71.13 per

barrel, \$39.01 per barrel of NGL, and \$3.89 per thousand cubic feet of gas.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net probable reserves and present worth attributable to the properties audited, under the aforementioned Ethane Rejection Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbb), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Ethane Rejection Forecast Price Sensitivity Case</b>				
	<b>Estimated by Antero</b>				
	<b>Net Probable Reserves and Present Worth at 10 Percent</b>				
	<b>as of June 30, 2013</b>				
	<b>Oil and Condensate (Mbb)</b>	<b>Natural Gas Liquids (Mbb)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	35,561	342,878	9,541,113	11,811,747	8,196,230
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Marcellus Probable</b>	<b>35,561</b>	<b>342,878</b>	<b>9,541,113</b>	<b>11,811,747</b>	<b>8,196,230</b>

#### Notes:

1. Probable reserves and values for probable reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net probable reserves estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.27 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between

the net probable reserves estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 4.60 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case.

#### **Ethane Recovery Forecast Price Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net probable reserves for the Ethane Recovery Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane recovery. The following economic assumptions

were used for estimating future prices and costs for the Ethane Recovery Forecast Sensitivity Price Case:

*Oil, Condensate, NGL, and Natural Gas Prices*

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

<u>Date</u>	<u>Oil, Condensate, and NGL (\$/bbl)</u>	<u>Natural Gas (\$/MMBtu)</u>
2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90
2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for oil, condensate, and NGL and \$3.86 per MMBtu for natural gas. Oil and condensate prices were adjusted for gravity and local differential based on information provided by Antero. NGL price adjustments were provided by Antero and

assume recovery of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price for oil and condensate was \$71.13 per barrel, \$18.44 per barrel of NGL, and \$3.86 per thousand cubic feet of gas.

*Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net probable reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Ethane Recovery Forecast Price Sensitivity Case</b>				
	<b>Estimated by Antero</b>				
	<b>Net Probable Reserves and Present Worth at 10 Percent</b>				
	<b>as of June 30, 2013</b>				
	<b>Oil and Condensate (Mbbbl)</b>	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	35,549	868,909	8,722,881	14,149,632	7,384,092
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Marcellus Probable</b>	<b>35,549</b>	<b>868,909</b>	<b>8,722,881</b>	<b>14,149,632</b>	<b>7,384,092</b>

Notes:

1. Probable reserves and values for probable reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net probable reserves estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual

properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.00 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net probable reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive and

negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 3.36 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Recovery Forecast Price Sensitivity Case.

DeGolyer and MacNaughton is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1936. DeGolyer and MacNaughton does not have any financial interest, including stock ownership, in Antero. Our fees were not contingent on the results of our evaluation. This letter report has been prepared at the request of Antero. DeGolyer and MacNaughton has used all data, assumptions, procedures, and methods that it considers necessary to prepare this report.

Very truly yours,

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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#### **CERTIFICATE of QUALIFICATION**

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

1. That I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report addressed to Antero dated July 24, 2013, and that I, as Senior Vice President, was responsible for the preparation of this report.
2. That I attended the University of Texas at Austin, and that I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers; and that I have in excess of 28 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**DeGolyer and MacNaughton**  
 5001 Spring Valley Road  
 Suite 800 East  
 Dallas, Texas 75244

July 24, 2013

Antero Resources Appalachian Corporation  
 1625 17th Street  
 Suite 300  
 Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted an audit of the estimates of net possible crude oil, condensate, natural gas liquids (NGL), and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero Resources Appalachian Corporation (Antero) for working and royalty interests owned in Pennsylvania and West Virginia. This evaluation was completed on July 24, 2013. Antero has represented that these properties account for 100 percent on a million cubic feet equivalent basis of Antero's net possible reserves in the Marcellus Shale in the Appalachian basin as of June 30, 2013. Antero has represented to us that these properties account for approximately 12.91 percent on a million cubic feet equivalent basis of Antero's net possible reserves as of June 30, 2013, and that the net possible reserves estimates have been prepared in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of June 30, 2013, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves included herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after June 30, 2013. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others. NGL have been estimated for certain properties and are

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based on the NGL yields provided by Antero and assume rejection of ethane during processing.

Future gross revenue is that revenue which will accrue to the appraised interests from the production and sale of the estimated net reserves. Future net revenue is calculated by deducting production and ad valorem taxes, operating expenses, and capital costs from the future gross revenue. Present worth is defined as future net revenue discounted at a specified arbitrary rate compounded monthly over the expected period of realization.

At the request of Antero, we have prepared an audit of the estimates of net possible oil, condensate, NGL, and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties assuming recovery of ethane during NGL processing, referred to as the "Ethane Recovery Sensitivity Case." Given the volatility in ethane prices, both ethane rejection and ethane recovery cases were included as of June 30, 2013, to provide comparability between reserves and present worth at 10 percent. Additionally, at the request of Antero, we have prepared an audit of the estimates of net possible oil, condensate, NGL, and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties for the ethane rejection and ethane recovery cases at forecast prices, referred to as the "Ethane Rejection Forecast Price Sensitivity Case" and the "Ethane Recovery Forecast Price Sensitivity Case," respectively.

Estimates of oil, condensate, NGL, and natural gas reserves and associated revenue should be regarded only as estimates that may change as further production history and additional information become available. Not only are such reserves and revenue estimates based on that information which is currently available, but such estimates are also subject to the uncertainties inherent in the application of judgmental factors in interpreting such information.

Data used in this audit were obtained from reviews with Antero personnel, Antero files, from records on file with the appropriate regulatory agencies, and from public sources. In the preparation of this report we have relied, without independent verification, upon such information furnished by Antero with respect to property interests, production from such properties, current costs of operation and development, current prices for production, agreements relating to current and future operations and sale of production, and various other information and data

that were accepted as represented. A field examination of the properties was not considered necessary for the purposes of this report.

**Methodology and Procedures**

Estimates of reserves were prepared by the use of appropriate geological and engineering methods that are in accordance with practices generally recognized by the petroleum industry as presented in the publication of the Society of Petroleum Engineers entitled "Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information (Revision as of February 19, 2007)." The method or combination of methods used in the analysis of each reservoir was tempered by experience with similar reservoirs, stage of development, quality and completeness of basic data, and production history. These assumptions, data, methods, and procedures are considered appropriate for the purpose for which this report has been prepared.

For depletion-type reservoirs or those whose performance disclosed a reliable decline in producing-rate trends or other diagnostic characteristics, reserves were estimated by the application of appropriate decline curves or other performance relationships. In the analyses of production-decline curves, reserves were estimated only to the limits of economic production or to the limit of the production licenses as appropriate.

Petroleum reserves estimated by Antero and by us are classified as possible and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net possible reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero's methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the

state in which the interest is located. Condensate reserves estimated herein are those to be recovered by conventional lease separation.

#### **Definition of Reserves**

Petroleum reserves estimated by Antero included in this report are classified as possible. Only possible reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the SEC. Reserves are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classified as follows:

*Proved oil and gas reserves* — Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience, engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable

technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and  
(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

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*Probable reserves* — Probable reserves are those additional reserves that are less certain to be recovered than proved reserves but which, together with proved reserves, are as likely as not to be recovered.

(i) When deterministic methods are used, it is as likely as not that actual remaining quantities recovered will exceed the sum of estimated proved plus probable reserves. When probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the proved plus probable reserves estimates.

(ii) Probable reserves may be assigned to areas of a reservoir adjacent to proved reserves where data control or interpretations of available data are less certain, even if the interpreted reservoir continuity of structure or productivity does not meet the reasonable certainty criterion. Probable reserves may be assigned to areas that are structurally higher than the proved area if these areas are in communication with the proved reservoir.

(iii) Probable reserves estimates also include potential incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than assumed for proved reserves.

(iv) See also guidelines in paragraphs (iv) and (vi) of the definition of possible reserves.

*Possible reserves* — Possible reserves are those additional reserves that are less certain to be recovered than probable reserves.

(i) When deterministic methods are used, the total quantities ultimately recovered from a project have a low probability of exceeding proved plus probable plus possible reserves. When probabilistic methods are used, there should be at least a 10% probability that the total quantities ultimately recovered will equal or exceed the proved plus probable plus possible reserves estimates.

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(ii) Possible reserves may be assigned to areas of a reservoir adjacent to probable reserves where data control and interpretations of available data are progressively less certain. Frequently, this will be in areas where geoscience and engineering data are unable to define clearly the area and vertical limits of commercial production from the reservoir by a defined project.

(iii) Possible reserves also include incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than the recovery quantities assumed for probable reserves.

(iv) The proved plus probable and proved plus probable plus possible reserves estimates must be based on reasonable alternative technical and commercial interpretations within the reservoir or subject project that are clearly documented, including comparisons to results in successful similar projects.

(v) Possible reserves may be assigned where geoscience and engineering data identify directly adjacent portions of a reservoir within the same accumulation that may be separated from proved areas by faults with displacement less than formation thickness or other geological discontinuities and that have not been penetrated by a wellbore, and the registrant believes that such adjacent portions are in communication with the known (proved) reservoir. Possible reserves may be assigned to areas that are structurally higher or lower than the proved area if these areas are in communication with the proved reservoir.

(vi) Pursuant to paragraph (iii) of the proved oil and gas definition, where direct observation has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves should be assigned in the structurally higher portions of the reservoir above the HKO only if the higher contact can be established with reasonable certainty through reliable technology. Portions of the reservoir that do not meet this reasonable certainty criterion may be

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assigned as probable and possible oil or gas based on reservoir fluid properties and pressure gradient interpretations.

*Developed oil and gas reserves* — Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

(i) Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and

(ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

*Undeveloped oil and gas reserves* — Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in [section 210.4—10 (a) Definitions], or by other evidence using reliable technology establishing reasonable certainty.

The extent to which possible reserves ultimately may be reclassified as proved reserves is dependent upon future drilling, testing, and well performance. The degree of risk to be applied in evaluating possible reserves is influenced by economic and technological factors as well as the time element. Possible reserves in this report have not been adjusted in consideration of these additional risks and therefore are not comparable with proved reserves.

#### **Primary Economic Assumptions**

The following economic assumptions were used for estimating existing and future prices and costs:

##### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$81.65 per barrel. The resulting weighted-average price for NGL was \$47.85 per barrel.

##### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$3.01 per thousand cubic feet.

##### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant's ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the June 30, 2013, estimated oil and gas volumes. The reserves estimated in this report can be produced under current regulatory guidelines.

Antero has represented that estimated net possible reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of possible reserves of the SEC. Antero represents that its estimates of the net possible reserves attributable to these properties, which represent 12.91 percent of Antero's total possible reserves on a net equivalent basis, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

**Net Possible Reserves and Present Worth at 10 Percent  
as of June 30, 2013**

	<b>Oil and Condensate (Mbbl)</b>	<b>Natural Gas Liquids (Mbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	694	5,770	920,253	959,039	212,386
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Marcellus Possible</b>	<b>694</b>	<b>5,770</b>	<b>920,253</b>	<b>959,039</b>	<b>212,386</b>

Notes:

1. Possible reserves and values for possible reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In our opinion, the information relating to estimated possible reserves, estimated future net revenue from possible reserves, and present worth of estimated future net revenue from possible reserves of oil, condensate, natural gas liquids, and gas contained in this report has been prepared in accordance with Paragraphs 932-235-50-4, 932-235-50-6, 932-235-50-7, 932-235-50-9, 932-235-50-30, and 932-235-50-31(a), (b), and (c) of the Accounting Standards Update 932-235-50, *Extractive Industries — Oil and Gas (Topic 932): Oil and Gas Reserve Estimation and Disclosures* (January 2010) of the Financial Accounting Standards Board and Rules 4—10(a) (1)—(32) of Regulation S—X and Rules 302(b), 1201, 1202(a) (1), (2), (3), (4), (5), (8), and 1203(a) of Regulation S—K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein, (ii) estimates of the possible developed and possible undeveloped reserves are not presented at the beginning of the year, and (iii) the effective date of this report does not coincide with Antero's fiscal year.

To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necessarily unable to express an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net possible reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.14 percent when compared on a net gas equivalent basis. It is our opinion that there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 0.98 percent overall difference. It is our opinion that there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for those properties we audited.

**Ethane Recovery Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net possible reserves for the Ethane Recovery Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The only adjustments made were to NGL yields and pricing to take into account ethane recovery and natural gas heating value adjustments. The following economic assumptions were used for estimating existing and future prices and costs for the Ethane Recovery Sensitivity Case:

*Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$81.65 per barrel. The resulting weighted-average price for NGL was \$24.95 per barrel.

*Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of



\$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$3.01 per thousand cubic feet.

*Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs

required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net possible reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Ethane Recovery Sensitivity Case</b>				
	<b>Estimated by Antero</b>				
	<b>Net Possible Reserves and Present Worth at 10 Percent</b>				
	<b>as of June 30, 2013</b>				
	<b>Oil and Condensate (Mbbbl)</b>	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	694	12,466	909,884	988,846	207,251
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Marcellus Possible</b>	<b>694</b>	<b>12,466</b>	<b>909,884</b>	<b>988,846</b>	<b>207,251</b>

Notes:

1. Possible reserves and values for possible reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net possible reserves estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.05 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be

compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 1.81 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case.

**Ethane Rejection Forecast Price Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net possible reserves for the Ethane Rejection Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane rejection. The following economic assumptions were used for estimating future prices and costs for the Ethane Rejection Forecast Price Sensitivity Case:

*Oil, Condensate, NGL, and Natural Gas Prices*

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

<b>Date</b>	<b>Oil, Condensate, and NGL (\$/bbl)</b>	<b>Natural Gas (\$/MMBtu)</b>

2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90
2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for oil, condensate, and NGL and \$3.86 per MMBtu for natural gas. Oil and condensate prices were adjusted for gravity and local differential based on information provided by Antero. NGL price adjustments were provided by Antero and assume rejection of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price for oil and condensate was \$70.89 per

barrel, \$39.73 per barrel of NGL, and \$3.79 per thousand cubic feet of gas.

*Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net possible reserves and present worth attributable to the properties audited, under the aforementioned Ethane Rejection Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

<b>Ethane Rejection Forecast Price Sensitivity Case</b>					
Estimated by Antero					
Net Possible Reserves and Present Worth at 10 Percent					
as of June 30, 2013					
Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)	
Audited by DeGolyer and MacNaughton	695	5,771	923,430	962,224	365,501
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Marcellus Possible</b>	<b>695</b>	<b>5,771</b>	<b>923,430</b>	<b>962,224</b>	<b>365,501</b>

Notes:

1. Possible reserves and values for possible reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net possible reserves estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in

an overall difference of 2.13 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 0.79 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case.

**Ethane Recovery Forecast Price Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net possible reserves for the Ethane Recovery Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane recovery. The following economic assumptions were used for estimating future prices and costs for the Ethane Recovery Forecast Sensitivity Price Case:

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

Date	Oil, Condensate, and NGL (\$/bbl)	Natural Gas (\$/MMBtu)
2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90
2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for oil, condensate, and NGL and \$3.86 per MMBtu for

natural gas. Oil and condensate prices were adjusted for gravity and local differential based on information provided by Antero. NGL price adjustments were provided by Antero and assume recovery of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price for oil and condensate was \$70.89 per barrel, \$21.18 per barrel of NGL, and \$3.79 per thousand cubic feet of gas.

*Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net possible reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	Ethane Recovery Forecast Price Sensitivity Case				
	Estimated by Antero				
	Net Possible Reserves and Present Worth at 10 Percent as of June 30, 2013				
Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)	
Audited by DeGolyer and MacNaughton	694	12,468	913,049	992,025	356,618
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Marcellus Possible</b>	<b>694</b>	<b>12,468</b>	<b>913,049</b>	<b>992,025</b>	<b>356,618</b>

Notes:

1. Possible reserves and values for possible reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net possible reserves estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.36 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 1.25 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane

Recovery Forecast Price Sensitivity Case.

DeGolyer and MacNaughton is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1936. DeGolyer and MacNaughton does not have any financial interest, including stock ownership, in Antero. Our fees were not contingent on the results of our evaluation. This letter report has been prepared at the request of Antero. DeGolyer and MacNaughton has used all data, assumptions, procedures, and methods that it considers necessary to prepare this report.

Very truly yours,

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**CERTIFICATE of QUALIFICATION**

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

1. That I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report addressed to Antero dated July 24, 2013, and that I, as Senior Vice President, was responsible for the preparation of this report.
2. That I attended the University of Texas at Austin, and that I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers; and that I have in excess of 28 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**DeGolyer and MacNaughton**  
5001 Spring Valley Road  
Suite 800 East  
Dallas, Texas 75244

July 24, 2013

Antero Resources Appalachian Corporation  
1625 17th Street  
Suite 300  
Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted an audit of the estimates of net proved natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero Resources Appalachian Corporation (Antero) for working and royalty interests owned in Pennsylvania and West Virginia. This evaluation was completed on July 24, 2013. Antero has represented that these properties account for 100 percent on a million cubic feet equivalent basis of Antero's net proved reserves in the Upper Devonian Shale in the Appalachian basin as of June 30, 2013. Antero has represented to us that these properties account for approximately 0.71 percent on a million cubic feet equivalent basis of Antero's net proved reserves as of June 30, 2013, and that the net proved reserves estimates have been prepared in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of June 30, 2013, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves included herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after June 30, 2013. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others.

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Future gross revenue is that revenue which will accrue to the appraised interests from the production and sale of the estimated net reserves. Future net revenue is calculated by deducting production and ad valorem taxes, operating expenses, and capital costs from the future gross revenue. Present worth is defined as future net revenue discounted at a specified arbitrary rate compounded monthly over the expected period of realization.

At the request of Antero, we have prepared an audit of the estimates of net proved natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties at forecast prices, referred to as the "Forecast Price Sensitivity Case."

Estimates of natural gas reserves and associated revenue should be regarded only as estimates that may change as further production history and additional information become available. Not only are such reserves and revenue estimates based on that information which is currently available, but such estimates are also subject to the uncertainties inherent in the application of judgmental factors in interpreting such information.

Data used in this audit were obtained from reviews with Antero personnel, Antero files, from records on file with the appropriate regulatory agencies, and from public sources. In the preparation of this report we have relied, without independent verification, upon such information furnished by Antero with respect to property interests, production from such properties, current costs of operation and development, current prices for production, agreements relating to current and future operations and sale of production, and various other information and data that were accepted as represented. A field examination of the properties was not considered necessary for the purposes of this report.

#### **Methodology and Procedures**

Estimates of reserves were prepared by the use of appropriate geological and engineering methods that are in accordance with practices generally recognized by the petroleum industry as presented in the publication of the Society of Petroleum Engineers entitled "Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information (Revision as of February 19, 2007)." The method or combination of methods used in the analysis of each reservoir was tempered by experience with similar reservoirs, stage of development, quality and completeness

For depletion-type reservoirs or those whose performance disclosed a reliable decline in producing-rate trends or other diagnostic characteristics, reserves were estimated by the application of appropriate decline curves or other performance relationships. In the analyses of production-decline curves, reserves were estimated only to the limits of economic production or to the limit of the production licenses as appropriate.

Petroleum reserves estimated by Antero and by us are classified as proved and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net proved reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero's methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the state in which the interest is located.

### **Definition of Reserves**

Petroleum reserves estimated by Antero included in this report are classified as proved. Only proved reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the SEC. Reserves are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices

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and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classified as follows:

*Proved oil and gas reserves* — Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience, engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

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(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and  
(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

*Developed oil and gas reserves* — Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

- (i) Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and
- (ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

*Undeveloped oil and gas reserves* — Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in [section 210.4—10 (a) Definitions], or by other evidence using reliable technology establishing reasonable certainty.

### **Primary Economic Assumptions**

The following economic assumptions were used for estimating existing and future prices and costs:

#### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$3.12 per thousand cubic feet.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant's ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the June 30, 2013, estimated gas volumes. The reserves estimated in this report can be produced under current regulatory guidelines.

Antero has represented that estimated net proved reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of proved reserves of the SEC. Antero represents that its estimates of the net proved reserves attributable to these properties, which represent 0.71 percent of Antero's total proved reserves on a net equivalent basis, are as follows, expressed in millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Estimated by Antero Net Proved Reserves and Present Worth at 10 Percent as of June 30, 2013</b>		
	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	44,389	44,389	6,592
Not Audited by DeGolyer and MacNaughton	0	0	0

<b>Total Upper Devonian Proved</b>	<b>44,389</b>	<b>44,389</b>	<b>6,592</b>
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Note: Future income taxes were not taken into account in the preparation of the estimates of present worth.

In our opinion, the information relating to estimated proved reserves, estimated future net revenue from proved reserves, and present worth of estimated future net revenue from proved reserves of gas contained in this report has been prepared in accordance with Paragraphs 932-235-50-4, 932-235-50-6, 932-235-50-7,

932-235-50-9, 932-235-50-30, and 932-235-50-31(a), (b), and (c) of the Accounting Standards Update 932-235-50, *Extractive Industries — Oil and Gas (Topic 932): Oil and Gas Reserve Estimation and Disclosures* (January 2010) of the Financial Accounting Standards Board and Rules 4—10(a) (1)—(32) of Regulation S—X and Rules 302(b), 1201, 1202(a) (1), (2), (3), (4), (5), (8), and 1203(a) of Regulation S—K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein, (ii) estimates of the proved developed and proved undeveloped reserves are not presented at the beginning of the year, and (iii) the effective date of this report does not coincide with Antero’s fiscal year.

To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necessarily unable to express an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net proved reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.81 percent when compared on a net gas equivalent basis. It is our opinion that there is no material difference between the net proved reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 6.74 percent overall difference. It is our opinion that for the audited properties the present worth at 10 percent estimates prepared by Antero appear reasonable.

**Forecast Price Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net proved reserves for the Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs,

or abandonment costs. The following economic assumptions were used for estimating future prices and costs for the Forecast Sensitivity Price Case:

*Natural Gas Prices*

Prices were provided by Antero as shown in the following table, expressed in dollars per MMBtu (\$/MMBtu):

<u>Date</u>	<u>Natural Gas (\$/MMBtu)</u>
2013	3.48
2014	3.69
2015	3.90
2016	4.05
2017 and thereafter	4.19

As of June 30, 2013, the 5-year average price is \$3.86 per MMBtu for natural gas. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price was \$3.91 per thousand cubic feet of gas.

*Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.



Antero represents that its estimates of the net proved reserves and present worth attributable to the properties audited, under the aforementioned Forecast Price Sensitivity Case assumptions, are as follows, expressed in millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Forecast Price Sensitivity Case</b>		
	<b>Estimated by Antero</b>		
	<b>Net Proved Reserves and Present Worth at</b>		
	<b>10 Percent</b>		
	<b>as of June 30, 2013</b>		
	<b>Natural Gas</b>	<b>Gas Equivalent</b>	<b>Present Worth</b>
	<b>(MMcf)</b>	<b>(MMcfe)</b>	<b>at 10 Percent</b>
			<b>(M\$)</b>
Audited by DeGolyer and MacNaughton	44,560	44,560	16,283
Not Audited by DeGolyer and MacNaughton	0	0	0
<b>Total Upper Devonian Proved</b>	<b>44,560</b>	<b>44,560</b>	<b>16,283</b>

Note: Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net proved reserves estimates prepared by us and by Antero for the Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.81 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net proved reserves estimates prepared by Antero and those prepared by us for the Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Forecast Price Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 3.10 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Forecast Price Sensitivity Case.

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DeGolyer and MacNaughton is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1936. DeGolyer and MacNaughton does not have any financial interest, including stock ownership, in Antero. Our fees were not contingent on the results of our evaluation. This letter report has been prepared at the request of Antero. DeGolyer and MacNaughton has used all data, assumptions, procedures, and methods that it considers necessary to prepare this report.

Very truly yours,

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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#### CERTIFICATE of QUALIFICATION

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

- That I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report addressed to Antero dated July 24, 2013, and that I, as Senior Vice President, was responsible for the preparation of this report.
- That I attended the University of Texas at Austin, and that I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers; and that I have in excess of 28 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.  
Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**DeGolyer and MacNaughton**  
5001 Spring Valley Road  
Suite 800 East  
Dallas, Texas 75244

July 24, 2013

Antero Resources Appalachian Corporation  
1625 17th Street  
Suite 300  
Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted an audit of the estimates of net probable natural gas liquids (NGL) and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero Resources Appalachian Corporation (Antero) for working and royalty interests owned in Pennsylvania and West Virginia. This evaluation was completed on July 24, 2013. Antero has represented that these properties account for 100 percent on a million cubic feet equivalent basis of Antero's net probable reserves in the Upper Devonian Shale in the Appalachian basin as of June 30, 2013. Antero has represented to us that these properties account for approximately 4.70 percent on a million cubic feet equivalent basis of Antero's net probable reserves as of June 30, 2013, and that the net probable reserves estimates have been prepared in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of June 30, 2013, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves included herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after June 30, 2013. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others. NGL have been estimated for certain properties and are based on the NGL yields provided by Antero and assume rejection of ethane during processing.

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Future gross revenue is that revenue which will accrue to the appraised interests from the production and sale of the estimated net reserves. Future net revenue is calculated by deducting production and ad valorem taxes, operating expenses, and capital costs from the future gross revenue. Present worth is defined as future net revenue discounted at a specified arbitrary rate compounded monthly over the expected period of realization.

At the request of Antero, we have prepared an audit of the estimates of net probable NGL and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties assuming recovery of ethane during NGL processing, referred to as the "Ethane Recovery Sensitivity Case." Given the volatility in ethane prices, both ethane rejection and ethane recovery cases were included as of June 30, 2013, to provide comparability between reserves and present worth at 10 percent. Additionally, at the request of Antero, we have prepared an audit of the estimates of net probable NGL and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties for the ethane rejection and ethane recovery cases at forecast prices, referred to as the "Ethane Rejection Forecast Price Sensitivity Case" and the "Ethane Recovery Forecast Price Sensitivity Case," respectively.

Estimates of NGL and natural gas reserves and associated revenue should be regarded only as estimates that may change as further production history and additional information become available. Not only are such reserves and revenue estimates based on that information which is currently available, but such estimates are also subject to the uncertainties inherent in the application of judgmental factors in interpreting such information.

Data used in this audit were obtained from reviews with Antero personnel, Antero files, from records on file with the appropriate regulatory agencies, and from public sources. In the preparation of this report we have relied, without independent verification, upon such information furnished by Antero with respect to property interests, production from such properties, current costs of operation and development, current prices for production, agreements relating to current and future operations and sale of production, and various other information and data that were accepted as represented. A field examination of the properties was not considered necessary for the purposes of this report.

### **Methodology and Procedures**

Estimates of reserves were prepared by the use of appropriate geological and engineering methods that are in accordance with practices generally recognized by the petroleum industry as presented in the publication of the Society of Petroleum Engineers entitled

“Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information (Revision as of February 19, 2007).” The method or combination of methods used in the analysis of each reservoir was tempered by experience with similar reservoirs, stage of development, quality and completeness of basic data, and production history. These assumptions, data, methods, and procedures are considered appropriate for the purpose for which this report has been prepared.

For depletion-type reservoirs or those whose performance disclosed a reliable decline in producing-rate trends or other diagnostic characteristics, reserves were estimated by the application of appropriate decline curves or other performance relationships. In the analyses of production-decline curves, reserves were estimated only to the limits of economic production or to the limit of the production licenses as appropriate.

Petroleum reserves estimated by Antero and by us are classified as probable and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net probable reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero’s methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the state in which the interest is located.

### **Definition of Reserves**

Petroleum reserves estimated by Antero included in this report are classified as probable. Only probable reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the SEC. Reserves are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classified as follows:

*Proved oil and gas reserves* — Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience,

engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and  
(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be

determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

*Probable reserves* — Probable reserves are those additional reserves that are less certain to be recovered than proved reserves but which, together with proved reserves, are as likely as not to be recovered.

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(i) When deterministic methods are used, it is as likely as not that actual remaining quantities recovered will exceed the sum of estimated proved plus probable reserves. When probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the proved plus probable reserves estimates.

(ii) Probable reserves may be assigned to areas of a reservoir adjacent to proved reserves where data control or interpretations of available data are less certain, even if the interpreted reservoir continuity of structure or productivity does not meet the reasonable certainty criterion. Probable reserves may be assigned to areas that are structurally higher than the proved area if these areas are in communication with the proved reservoir.

(iii) Probable reserves estimates also include potential incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than assumed for proved reserves.

(iv) See also guidelines in paragraphs (iv) and (vi) of the definition of possible reserves.

*Possible reserves* — Possible reserves are those additional reserves that are less certain to be recovered than probable reserves.

(i) When deterministic methods are used, the total quantities ultimately recovered from a project have a low probability of exceeding proved plus probable plus possible reserves. When probabilistic methods are used, there should be at least a 10% probability that the total quantities ultimately recovered will equal or exceed the proved plus probable plus possible reserves estimates.

(ii) Possible reserves may be assigned to areas of a reservoir adjacent to probable reserves where data control and interpretations of available data are progressively less certain. Frequently, this will be in areas where geoscience and

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engineering data are unable to define clearly the area and vertical limits of commercial production from the reservoir by a defined project.

(iii) Possible reserves also include incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than the recovery quantities assumed for probable reserves.

(iv) The proved plus probable and proved plus probable plus possible reserves estimates must be based on reasonable alternative technical and commercial interpretations within the reservoir or subject project that are clearly documented, including comparisons to results in successful similar projects.

(v) Possible reserves may be assigned where geoscience and engineering data identify directly adjacent portions of a reservoir within the same accumulation that may be separated from proved areas by faults with displacement less than formation thickness or other geological discontinuities and that have not been penetrated by a wellbore, and the registrant believes that such adjacent portions are in communication with the known (proved) reservoir. Possible reserves may be assigned to areas that are structurally higher or lower than the proved area if these areas are in communication with the proved reservoir.

(vi) Pursuant to paragraph (iii) of the proved oil and gas definition, where direct observation has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves should be assigned in the structurally higher portions of the reservoir above the HKO only if the higher contact can be established with reasonable certainty through reliable technology. Portions of the reservoir that do not meet this reasonable certainty criterion may be assigned as probable and possible oil or gas based on reservoir fluid properties and pressure gradient interpretations.

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*Developed oil and gas reserves* — Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

(i) Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and

(ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction

is by means not involving a well.

*Undeveloped oil and gas reserves* — Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in [section 210.4—10 (a) Definitions], or by other evidence using reliable technology establishing reasonable certainty.

The extent to which probable reserves ultimately may be reclassified as proved reserves is dependent upon future drilling, testing, and well performance.

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The degree of risk to be applied in evaluating probable reserves is influenced by economic and technological factors as well as the time element. Probable reserves in this report have not been adjusted in consideration of these additional risks and therefore are not comparable with proved reserves.

#### **Primary Economic Assumptions**

The following economic assumptions were used for estimating existing and future prices and costs:

##### *NGL Prices*

Antero has represented that the NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for NGL was \$44.06 per barrel.

##### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$3.09 per thousand cubic feet.

##### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future

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costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant's ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the June 30, 2013, estimated NGL and gas volumes. The reserves estimated in this report can be produced under current regulatory guidelines.

Antero has represented that estimated net probable reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of probable reserves of the SEC. Antero represents that its estimates of the net probable reserves attributable to these properties, which represent 4.70 percent of Antero's total probable reserves on a net equivalent basis, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

Estimated by Antero

**Net Probable Reserves and  
Present Worth at 10 Percent  
as of June 30, 2013**

	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (MS)</b>
Audited by DeGolyer and MacNaughton	341	658,456	660,504	(39,512)
Not Audited by DeGolyer and MacNaughton	0	0	0	0
<b>Total Upper Devonian Probable</b>	<b>341</b>	<b>658,456</b>	<b>660,504</b>	<b>(39,512)</b>

Notes:

1. Probable reserves and values for probable reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In our opinion, the information relating to estimated probable reserves, estimated future net revenue from probable reserves, and present worth of estimated future net revenue from probable reserves of natural gas liquids and gas contained in this report has been prepared in accordance with Paragraphs 932-235-

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50-4, 932-235-50-6, 932-235-50-7, 932-235-50-9, 932-235-50-30, and 932-235-50-31(a), (b), and (e) of the Accounting Standards Update 932-235-50, *Extractive Industries — Oil and Gas (Topic 932): Oil and Gas Reserve Estimation and Disclosures* (January 2010) of the Financial Accounting Standards Board and Rules 4—10(a) (1)—(32) of Regulation S—X and Rules 302(b), 1201, 1202(a) (1), (2), (3), (4), (5), (8), and 1203(a) of Regulation S—K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein, (ii) estimates of the probable developed and probable undeveloped reserves are not presented at the beginning of the year, and (iii) the effective date of this report does not coincide with Antero's fiscal year.

To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necessarily unable to express an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net probable reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.09 percent when compared on a net gas equivalent basis. It is our opinion that there is no material difference between the net probable reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 0.42 percent overall difference. It is our opinion that there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for those properties we audited.

**Ethane Recovery Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net probable reserves for the Ethane Recovery Sensitivity Case. There

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were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The only adjustments made were to NGL yields and pricing to take into account ethane recovery and natural gas heating value adjustments. The following economic assumptions were used for estimating existing and future prices and costs for the Ethane Recovery Sensitivity Case:

*NGL Prices*

Antero has represented that the NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for NGL was \$14.70 per barrel.

*Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing,

calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$3.09 per thousand cubic feet.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

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Antero represents that its estimates of the net probable reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Ethane Recovery Sensitivity Case</b>			
	<b>Estimated by Antero</b>			
	<b>Net Probable Reserves and Present Worth at</b>			
	<b>10 Percent</b>			
	<b>as of June 30, 2013</b>			
	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	1,362	656,861	665,033	(39,925)
Not Audited by DeGolyer and MacNaughton	0	0	0	0
<b>Total Upper Devonian Probable</b>	<b>1,362</b>	<b>656,861</b>	<b>665,033</b>	<b>(39,925)</b>

#### Notes:

1. Probable reserves and values for probable reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net probable reserves estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.97 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net probable reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 3.94 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case.

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#### **Ethane Rejection Forecast Price Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net probable reserves for the Ethane Rejection Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane rejection. The following economic assumptions were used for estimating future prices and costs for the Ethane Rejection Forecast Price Sensitivity Case:

#### *NGL and Natural Gas Prices*

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

<u>Date</u>	<u>NGL (\$/bbl)</u>	<u>Natural Gas (\$/MMBtu)</u>



2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90
2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for NGL and \$3.86 per MMBtu for natural gas. NGL price adjustments were provided by Antero and assume rejection of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price was \$37.21 per barrel of NGL and \$3.90 per thousand cubic feet of gas.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions.

Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net probable reserves and present worth attributable to the properties audited, under the aforementioned Ethane Rejection Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcfe), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Ethane Rejection Forecast Price Sensitivity Case</b>			
	<b>Estimated by Antero</b>			
	<b>Net Probable Reserves and Present Worth at</b>			
	<b>10 Percent</b>			
	<b>as of June 30, 2013</b>			
	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcfe)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	342	661,120	663,174	18,745
Not Audited by DeGolyer and MacNaughton	0	0	0	0
<b>Total Upper Devonian Probable</b>	<b>342</b>	<b>661,120</b>	<b>663,174</b>	<b>18,745</b>

#### Notes:

1. Probable reserves and values for probable reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net probable reserves estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.08 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net probable reserves estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 2.41 percent overall difference. It is our opinion that for the audited properties there is no material

difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case.

#### **Ethane Recovery Forecast Price Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net probable reserves for the Ethane Recovery Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane recovery. The following economic assumptions were used for estimating future prices and costs for the Ethane Recovery Forecast Sensitivity Price Case:

## NGL and Natural Gas Prices

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

<u>Date</u>	<u>NGL (\$/bbl)</u>	<u>Natural Gas (\$/MMBtu)</u>
2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90
2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for NGL and \$3.86 per MMBtu for natural gas. NGL price adjustments were provided by Antero and assume recovery of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price was \$12.78 per barrel of NGL and \$3.90 per thousand cubic feet of gas.

## Operating Expenses and Capital Costs

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs

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required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net probable reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Ethane Recovery Forecast Price Sensitivity Case</b>			
	<b>Estimated by Antero</b>			
	<b>Net Probable Reserves and Present Worth at</b>			
	<b>10 Percent</b>			
	<b>as of June 30, 2013</b>			
	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	1,366	659,518	667,712	18,094
Not Audited by DeGolyer and MacNaughton	0	0	0	0
<b>Total Upper Devonian Probable</b>	<b>1,366</b>	<b>659,518</b>	<b>667,712</b>	<b>18,094</b>

Notes:

1. Probable reserves and values for probable reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net probable reserves estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in

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an overall difference of 3.36 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net probable reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 0.12 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane

Recovery Forecast Price Sensitivity Case.

DeGolyer and MacNaughton is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1936. DeGolyer and MacNaughton does not have any financial interest, including stock ownership, in Antero. Our fees were not contingent on the results of our evaluation. This letter report has been prepared at the request of Antero. DeGolyer and MacNaughton has used all data, assumptions, procedures, and methods that it considers necessary to prepare this report.

Very truly yours,

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**CERTIFICATE of QUALIFICATION**

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

1. That I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report addressed to Antero dated July 24, 2013, and that I, as Senior Vice President, was responsible for the preparation of this report.
2. That I attended the University of Texas at Austin, and that I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers; and that I have in excess of 28 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**DeGolyer and MacNaughton**  
5001 Spring Valley Road  
Suite 800 East  
Dallas, Texas 75244

July 24, 2013

Antero Resources Appalachian Corporation  
1625 17th Street  
Suite 300  
Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted an audit of the estimates of net possible crude oil, condensate, natural gas liquids (NGL), and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero Resources Appalachian Corporation (Antero) for working and royalty interests owned in Pennsylvania and West Virginia. This evaluation was completed on July 24, 2013. Antero has represented that these properties account for 100 percent on a million cubic feet equivalent basis of Antero's net possible reserves in the Upper Devonian Shale in the Appalachian basin as of June 30, 2013. Antero has represented to us that these properties account for approximately 41.40 percent on a million cubic feet equivalent basis of Antero's net possible reserves as of June 30, 2013, and that the net possible reserves estimates have been prepared in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of June 30, 2013, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves included herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after June 30, 2013. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others. NGL have been estimated for certain properties and are

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based on the NGL yields provided by Antero and assume rejection of ethane during processing.

Future gross revenue is that revenue which will accrue to the appraised interests from the production and sale of the estimated net reserves. Future net revenue is calculated by deducting production and ad valorem taxes, operating expenses, and capital costs from the future gross revenue. Present worth is defined as future net revenue discounted at a specified arbitrary rate compounded monthly over the expected period of realization.

At the request of Antero, we have prepared an audit of the estimates of net possible oil, condensate, NGL, and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties assuming recovery of ethane during NGL processing, referred to as the "Ethane Recovery Sensitivity Case." Given the volatility in ethane prices, both ethane rejection and ethane recovery cases were included as of June 30, 2013, to provide comparability between reserves and present worth at 10 percent. Additionally, at the request of Antero, we have prepared an audit of the estimates of net possible oil, condensate, NGL, and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties for the ethane rejection and ethane recovery cases at forecast prices, referred to as the "Ethane Rejection Forecast Price Sensitivity Case" and the "Ethane Recovery Forecast Price Sensitivity Case," respectively.

Estimates of oil, condensate, NGL, and natural gas reserves and associated revenue should be regarded only as estimates that may change as further production history and additional information become available. Not only are such reserves and revenue estimates based on that information which is currently available, but such estimates are also subject to the uncertainties inherent in the application of judgmental factors in interpreting such information.

Data used in this audit were obtained from reviews with Antero personnel, Antero files, from records on file with the appropriate regulatory agencies, and from public sources. In the preparation of this report we have relied, without independent verification, upon such information furnished by Antero with respect to property interests, production from such properties, current costs of operation and development, current prices for production, agreements relating to current and future operations and sale of production, and various other information and data

that were accepted as represented. A field examination of the properties was not considered necessary for the purposes of this report.

**Methodology and Procedures**

Estimates of reserves were prepared by the use of appropriate geological and engineering methods that are in accordance with practices generally recognized by the petroleum industry as presented in the publication of the Society of Petroleum Engineers entitled "Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information (Revision as of February 19, 2007)." The method or combination of methods used in the analysis of each reservoir was tempered by experience with similar reservoirs, stage of development, quality and completeness of basic data, and production history. These assumptions, data, methods, and procedures are considered appropriate for the purpose for which this report has been prepared.

For depletion-type reservoirs or those whose performance disclosed a reliable decline in producing-rate trends or other diagnostic characteristics, reserves were estimated by the application of appropriate decline curves or other performance relationships. In the analyses of production-decline curves, reserves were estimated only to the limits of economic production or to the limit of the production licenses as appropriate.

Petroleum reserves estimated by Antero and by us are classified as possible and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net possible reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero's methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the

state in which the interest is located. Condensate reserves estimated herein are those to be recovered by conventional lease separation.

#### **Definition of Reserves**

Petroleum reserves estimated by Antero included in this report are classified as possible. Only possible reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the SEC. Reserves are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classified as follows:

*Proved oil and gas reserves* — Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience, engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable

technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and  
(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

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*Probable reserves* — Probable reserves are those additional reserves that are less certain to be recovered than proved reserves but which, together with proved reserves, are as likely as not to be recovered.

(i) When deterministic methods are used, it is as likely as not that actual remaining quantities recovered will exceed the sum of estimated proved plus probable reserves. When probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the proved plus probable reserves estimates.

(ii) Probable reserves may be assigned to areas of a reservoir adjacent to proved reserves where data control or interpretations of available data are less certain, even if the interpreted reservoir continuity of structure or productivity does not meet the reasonable certainty criterion. Probable reserves may be assigned to areas that are structurally higher than the proved area if these areas are in communication with the proved reservoir.

(iii) Probable reserves estimates also include potential incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than assumed for proved reserves.

(iv) See also guidelines in paragraphs (iv) and (vi) of the definition of possible reserves.

*Possible reserves* — Possible reserves are those additional reserves that are less certain to be recovered than probable reserves.

(i) When deterministic methods are used, the total quantities ultimately recovered from a project have a low probability of exceeding proved plus probable plus possible reserves. When probabilistic methods are used, there should be at least a 10% probability that the total quantities ultimately recovered will equal or exceed the proved plus probable plus possible reserves estimates.

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(ii) Possible reserves may be assigned to areas of a reservoir adjacent to probable reserves where data control and interpretations of available data are progressively less certain. Frequently, this will be in areas where geoscience and engineering data are unable to define clearly the area and vertical limits of commercial production from the reservoir by a defined project.

(iii) Possible reserves also include incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than the recovery quantities assumed for probable reserves.

(iv) The proved plus probable and proved plus probable plus possible reserves estimates must be based on reasonable alternative technical and commercial interpretations within the reservoir or subject project that are clearly documented, including comparisons to results in successful similar projects.

(v) Possible reserves may be assigned where geoscience and engineering data identify directly adjacent portions of a reservoir within the same accumulation that may be separated from proved areas by faults with displacement less than formation thickness or other geological discontinuities and that have not been penetrated by a wellbore, and the registrant believes that such adjacent portions are in communication with the known (proved) reservoir. Possible reserves may be assigned to areas that are structurally higher or lower than the proved area if these areas are in communication with the proved reservoir.

(vi) Pursuant to paragraph (iii) of the proved oil and gas definition, where direct observation has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves should be assigned in the structurally higher portions of the reservoir above the HKO only if the higher contact can be established with reasonable certainty through reliable technology. Portions of the reservoir that do not meet this reasonable certainty criterion may be

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assigned as probable and possible oil or gas based on reservoir fluid properties and pressure gradient interpretations.

*Developed oil and gas reserves* — Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

(i) Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and

(ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

*Undeveloped oil and gas reserves* — Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in [section 210.4—10 (a) Definitions], or by other evidence using reliable technology establishing reasonable certainty.

The extent to which possible reserves ultimately may be reclassified as proved reserves is dependent upon future drilling, testing, and well performance. The degree of risk to be applied in evaluating possible reserves is influenced by economic and technological factors as well as the time element. Possible reserves in this report have not been adjusted in consideration of these additional risks and therefore are not comparable with proved reserves.

#### **Primary Economic Assumptions**

The following economic assumptions were used for estimating existing and future prices and costs:

##### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$81.65 per barrel. The resulting weighted-average price for NGL was \$45.25 per barrel.

##### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$2.97 per thousand cubic feet.

##### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant's ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the June 30, 2013, estimated oil and gas volumes. The reserves estimated in this report can be produced under current regulatory guidelines.

Antero has represented that estimated net possible reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of possible reserves of the SEC. Antero represents that its estimates of the net possible reserves attributable to these properties, which represent 41.40 percent of Antero's total possible reserves on a net equivalent basis, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

**Net Possible Reserves and Present Worth at 10 Percent  
as of June 30, 2013**

	<b>Oil and Condensate (Mbbbl)</b>	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	515	37,052	2,849,999	3,075,396	(45,098)
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Upper Devonian Possible</b>	<b>515</b>	<b>37,052</b>	<b>2,849,999</b>	<b>3,075,396</b>	<b>(45,098)</b>

Notes:

1. Possible reserves and values for possible reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In our opinion, the information relating to estimated possible reserves, estimated future net revenue from possible reserves, and present worth of estimated future net revenue from possible reserves of oil, condensate, natural gas liquids, and gas contained in this report has been prepared in accordance with Paragraphs 932-235-50-4, 932-235-50-6, 932-235-50-7, 932-235-50-9, 932-235-50-30, and 932-235-50-31(a), (b), and (c) of the Accounting Standards Update 932-235-50, *Extractive Industries — Oil and Gas (Topic 932): Oil and Gas Reserve Estimation and Disclosures* (January 2010) of the Financial Accounting Standards Board and Rules 4—10(a) (1)—(32) of Regulation S—X and Rules 302(b), 1201, 1202(a) (1), (2), (3), (4), (5), (8), and 1203(a) of Regulation S—K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein, (ii) estimates of the possible developed and possible undeveloped reserves are not presented at the beginning of the year, and (iii) the effective date of this report does not coincide with Antero's fiscal year.

To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necessarily unable to express an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net possible reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.13 percent when compared on a net gas equivalent basis. It is our opinion that there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 3.38 percent overall difference. It is our opinion that there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for those properties we audited.

**Ethane Recovery Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net possible reserves for the Ethane Recovery Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The only adjustments made were to NGL yields and pricing to take into account ethane recovery and natural gas heating value adjustments. The following economic assumptions were used for estimating existing and future prices and costs for the Ethane Recovery Sensitivity Case:

*Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$81.65 per barrel. The resulting weighted-average price for NGL was \$16.77 per barrel.

*Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were



calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$2.86 per thousand cubic feet.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs

required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net possible reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbb), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Ethane Recovery Sensitivity Case</b>				
	<b>Estimated by Antero</b>				
	<b>Net Possible Reserves and Present Worth at 10 Percent as of June 30, 2013</b>				
<b>Oil and Condensate (Mbb)</b>	<b>Natural Gas Liquids (Mbb)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>	
Audited by DeGolyer and MacNaughton	514	124,043	2,714,503	3,461,845	(84,274)
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Upper Devonian Possible</b>	<b>514</b>	<b>124,043</b>	<b>2,714,503</b>	<b>3,461,845</b>	<b>(84,274)</b>

#### Notes:

1. Possible reserves and values for possible reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net possible reserves estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.52 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be

compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 3.96 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case.

#### **Ethane Rejection Forecast Price Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net possible reserves for the Ethane Rejection Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane rejection. The following economic assumptions were used for estimating future prices and costs for the Ethane Rejection Forecast Price Sensitivity Case:

#### *Oil, Condensate, NGL, and Natural Gas Prices*

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

<b>Oil, Condensate, and NGL</b>	<b>Natural Gas</b>
---	------------------------

<u>Date</u>	<u>(\$/bbl)</u>	<u>(\$/MMBtu)</u>
2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90
2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for oil, condensate, and NGL and \$3.86 per MMBtu for natural gas. Oil and condensate prices were adjusted for gravity and local differential based on information provided by Antero. NGL price adjustments were provided by Antero and assume rejection of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price for oil and condensate was \$70.88 per

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barrel, \$36.96 per barrel of NGL, and \$3.76 per thousand cubic feet of gas.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net possible reserves and present worth attributable to the properties audited, under the aforementioned Ethane Rejection Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbb), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Ethane Rejection Forecast Price Sensitivity Case</b>				
	<b>Estimated by Antero</b>				
	<b>Net Possible Reserves and Present Worth at 10 Percent as of June 30, 2013</b>				
<b>Oil and Condensate (Mbb)</b>	<b>Natural Gas Liquids (Mbb)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>	
Audited by DeGolyer and MacNaughton	515	37,116	2,859,613	3,085,401	185,239
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Upper Devonian Possible</b>	<b>515</b>	<b>37,116</b>	<b>2,859,613</b>	<b>3,085,401</b>	<b>185,239</b>

#### Notes:

1. Possible reserves and values for possible reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net possible reserves estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in

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an overall difference of 2.22 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 4.30 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case.

#### **Ethane Recovery Forecast Price Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net possible reserves for the Ethane Recovery Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane recovery. The following economic assumptions were used for estimating future prices and costs for the Ethane Recovery Forecast Sensitivity Price Case:

*Oil, Condensate, NGL, and Natural Gas Prices*

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

<u>Date</u>	<u>Oil, Condensate, and NGL (\$/bbl)</u>	<u>Natural Gas (\$/MMBtu)</u>
2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90
2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for oil, condensate, and NGL and \$3.86 per MMBtu for

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natural gas. Oil and condensate prices were adjusted for gravity and local differential based on information provided by Antero. NGL price adjustments were provided by Antero and assume recovery of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price for oil and condensate was \$70.88 per barrel, \$14.63 per barrel of NGL, and \$3.63 per thousand cubic feet of gas.

*Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net possible reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<u>Ethane Recovery Forecast Price Sensitivity Case</u>				
	<u>Estimated by Antero</u>				
	<u>Net Possible Reserves and Present Worth at 10 Percent as of June 30, 2013</u>				
<u>Oil and Condensate (Mbbbl)</u>	<u>Natural Gas Liquids (Mbbbl)</u>	<u>Natural Gas (MMcf)</u>	<u>Gas Equivalent (MMcfe)</u>	<u>Present Worth at 10 Percent (M\$)</u>	
Audited by DeGolyer and MacNaughton	515	124,246	2,723,634	3,472,198	121,373
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Upper Devonian Possible</b>	<b>515</b>	<b>124,246</b>	<b>2,723,634</b>	<b>3,472,198</b>	<b>121,373</b>

Notes:

1. Possible reserves and values for possible reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

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In comparing the detailed net possible reserves estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.81 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 3.69 percent overall difference. It is our opinion that for the audited properties there is no

material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Recovery Forecast Price Sensitivity Case.

DeGolyer and MacNaughton is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1936. DeGolyer and MacNaughton does not have any financial interest, including stock ownership, in Antero. Our fees were not contingent on the results of our evaluation. This letter report has been prepared at the request of Antero. DeGolyer and MacNaughton has used all data, assumptions, procedures, and methods that it considers necessary to prepare this report.

Very truly yours,

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

/s/ Gregory K. Graves, P.E.  
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Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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#### **CERTIFICATE of QUALIFICATION**

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

1. That I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report addressed to Antero dated July 24, 2013, and that I, as Senior Vice President, was responsible for the preparation of this report.
2. That I attended the University of Texas at Austin, and that I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers; and that I have in excess of 28 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.  
\_\_\_\_\_  
Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**DeGolyer and MacNaughton**  
5001 Spring Valley Road  
Suite 800 East  
Dallas, Texas 75244

July 24, 2013

Antero Resources Appalachian Corporation  
1625 17th Street  
Suite 300  
Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted an audit of the estimates of net proved crude oil, condensate, natural gas liquids (NGL), and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero Resources Appalachian Corporation (Antero) for working and royalty interests owned in Ohio. This evaluation was completed on July 24, 2013. Antero has represented that these properties account for 100 percent on a million cubic feet equivalent basis of Antero's net proved reserves in the Utica Shale in the Appalachian basin as of June 30, 2013. Antero has represented to us that these properties account for approximately 4.44 percent on a million cubic feet equivalent basis of Antero's net proved reserves as of June 30, 2013, and that the net proved reserves estimates have been prepared in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of June 30, 2013, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves included herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after June 30, 2013. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others. NGL have been estimated for certain properties and are based on the NGL yields provided by Antero and assume rejection of ethane during processing.

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Future gross revenue is that revenue which will accrue to the appraised interests from the production and sale of the estimated net reserves. Future net revenue is calculated by deducting production and ad valorem taxes, operating expenses, and capital costs from the future gross revenue. Present worth is defined as future net revenue discounted at a specified arbitrary rate compounded monthly over the expected period of realization.

At the request of Antero, we have prepared an audit of the estimates of net proved oil, condensate, NGL, and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties assuming recovery of ethane during NGL processing, referred to as the "Ethane Recovery Sensitivity Case." Given the volatility in ethane prices, both ethane rejection and ethane recovery cases were included as of June 30, 2013, to provide comparability between reserves and present worth at 10 percent. Additionally, at the request of Antero, we have prepared an audit of the estimates of net proved oil, condensate, NGL, and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties for the ethane rejection and ethane recovery cases at forecast prices, referred to as the "Ethane Rejection Forecast Price Sensitivity Case" and the "Ethane Recovery Forecast Price Sensitivity Case," respectively.

Estimates of oil, condensate, NGL, and natural gas reserves and associated revenue should be regarded only as estimates that may change as further production history and additional information become available. Not only are such reserves and revenue estimates based on that information which is currently available, but such estimates are also subject to the uncertainties inherent in the application of judgmental factors in interpreting such information.

Data used in this audit were obtained from reviews with Antero personnel, Antero files, from records on file with the appropriate regulatory agencies, and from public sources. In the preparation of this report we have relied, without independent verification, upon such information furnished by Antero with respect to property interests, production from such properties, current costs of operation and development, current prices for production, agreements relating to current and future operations and sale of production, and various other information and data that were accepted as represented. A field examination of the properties was not considered necessary for the purposes of this report.

### **Methodology and Procedures**

Estimates of reserves were prepared by the use of appropriate geological and engineering methods that are in accordance with practices generally recognized by the petroleum industry as presented in the publication of the Society of Petroleum Engineers entitled

“Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information (Revision as of February 19, 2007).” The method or combination of methods used in the analysis of each reservoir was tempered by experience with similar reservoirs, stage of development, quality and completeness of basic data, and production history. These assumptions, data, methods, and procedures are considered appropriate for the purpose for which this report has been prepared.

For depletion-type reservoirs or those whose performance disclosed a reliable decline in producing-rate trends or other diagnostic characteristics, reserves were estimated by the application of appropriate decline curves or other performance relationships. In the analyses of production-decline curves, reserves were estimated only to the limits of economic production or to the limit of the production licenses as appropriate.

Petroleum reserves estimated by Antero and by us are classified as proved and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net proved reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero’s methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the state in which the interest is located. Condensate reserves estimated herein are those to be recovered by conventional lease separation.

### **Definition of Reserves**

Petroleum reserves estimated by Antero included in this report are classified as proved. Only proved reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the SEC. Reserves are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classified as follows:

*Proved oil and gas reserves* — Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience,

engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and  
(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

*Developed oil and gas reserves* — Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

(i) Through existing wells with existing equipment and operating methods or in which the cost of the required

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equipment is relatively minor compared to the cost of a new well; and

(ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

*Undeveloped oil and gas reserves* — Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in [section 210.4—10 (a) Definitions], or by other evidence using reliable technology establishing reasonable certainty.

### **Primary Economic Assumptions**

The following economic assumptions were used for estimating existing and future prices and costs:

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#### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$81.14 per barrel. The resulting weighted-average price for NGL was \$48.80 per barrel.

#### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$3.11 per thousand cubic feet.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant's ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the June 30, 2013, estimated oil and gas volumes. The

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reserves estimated in this report can be produced under current regulatory guidelines.

Antero has represented that estimated net proved reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of proved reserves of the SEC. Antero represents that its estimates of the net proved reserves attributable to these properties, which represent 4.44 percent of Antero's total proved reserves on a net equivalent basis, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	Estimated by Antero				Present Worth at 10 Percent (M\$)
	Net Proved Reserves and Present Worth at 10 Percent as of June 30, 2013				
	Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	
Audited by DeGolyer and MacNaughton	2,375	10,371	202,242	278,720	522,235
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Proved</b>	<b>2,375</b>	<b>10,371</b>	<b>202,242</b>	<b>278,720</b>	<b>522,235</b>

Notes:

1. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
2. Numbers may not add due to rounding.
3. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In our opinion, the information relating to estimated proved reserves, estimated future net revenue from proved reserves, and present worth of estimated future net revenue from proved reserves of oil, condensate, natural gas liquids, and gas contained in this report has been prepared in accordance with Paragraphs 932-235-50-4, 932-235-50-6, 932-235-50-7, 932-235-50-9, 932-235-50-30, and 932-235-50-31(a), (b), and (e) of the Accounting Standards Update 932-235-50, *Extractive Industries — Oil and Gas (Topic 932): Oil and Gas Reserve Estimation and Disclosures* (January 2010) of the Financial Accounting Standards Board and Rules 4—10(a) (1)—(32) of Regulation S—X and Rules 302(b), 1201, 1202(a) (1), (2), (3), (4), (5), (8), and 1203(a) of Regulation S—K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein, (ii) estimates of the proved developed and proved undeveloped reserves are not presented at the beginning of the year, and (iii) the effective date of this report does not coincide with Antero's fiscal year.

To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necessarily unable to express an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net proved reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.04 percent when compared on a net gas equivalent basis. It is our opinion that there is no material difference between the net proved reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 2.21 percent overall difference. It is our opinion that there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for those properties we audited.

**Ethane Recovery Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net proved reserves for the Ethane Recovery Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The only adjustments made were to NGL yields and pricing to take into account ethane recovery and natural gas heating value adjustments. The following economic assumptions were used for estimating existing and future prices and costs for the Ethane Recovery Sensitivity Case:

*Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the



end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$81.14 per barrel. The resulting weighted-average price for NGL was \$23.43 per barrel.

#### Natural Gas Prices

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$2.77 per thousand cubic feet.

#### Operating Expenses and Capital Costs

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

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Antero represents that its estimates of the net proved reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	Ethane Recovery Sensitivity Case				
	Estimated by Antero				
	Net Proved Reserves and Present Worth at 10 Percent as of June 30, 2013				
Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)	
Audited by DeGolyer and MacNaughton	2,375	24,418	180,384	341,141	492,980
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Proved</b>	<b>2,375</b>	<b>24,418</b>	<b>180,384</b>	<b>341,141</b>	<b>492,980</b>

#### Notes:

1. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
2. Numbers may not add due to rounding.
3. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net proved reserves estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 1.73 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net proved reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 1.18 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case.

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#### Ethane Rejection Forecast Price Sensitivity Case

The aforementioned methodology and procedures were used to determine estimates of net proved reserves for the Ethane Rejection Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane rejection. The following economic assumptions were used for estimating future prices and costs for the Ethane Rejection Forecast Price Sensitivity Case:

#### *Oil, Condensate, NGL, and Natural Gas Prices*

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

Date	Oil, Condensate, and NGL (\$/bbl)	Natural Gas (\$/MMBtu)
2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90
2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for oil, condensate, and NGL and \$3.86 per MMBtu for natural gas. Oil and condensate prices were adjusted for gravity and local differential based on information provided by Antero. NGL price adjustments were provided by Antero and assume rejection of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price for oil and condensate was \$74.42 per barrel, \$40.66 per barrel of NGL, and \$3.78 per thousand cubic feet of gas.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs

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required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net proved reserves and present worth attributable to the properties audited, under the aforementioned Ethane Rejection Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	Ethane Rejection Forecast Price Sensitivity Case				
	Estimated by Antero				
	Net Proved Reserves and Present Worth at 10 Percent as of June 30, 2013				
Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)	
Audited by DeGolyer and MacNaughton	2,376	10,372	202,267	278,753	533,043
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Proved</b>	<b>2,376</b>	<b>10,372</b>	<b>202,267</b>	<b>278,753</b>	<b>533,043</b>

#### Notes:

1. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
2. Numbers may not add due to rounding.
3. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net proved reserves estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.03 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net proved reserves estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 2.27 percent overall difference. It is our opinion that for the audited properties there is no material

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difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case.

#### Ethane Recovery Forecast Price Sensitivity Case

The aforementioned methodology and procedures were used to determine estimates of net proved reserves for the Ethane

Recovery Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane recovery. The following economic assumptions were used for estimating future prices and costs for the Ethane Recovery Forecast Sensitivity Price Case:

*Oil, Condensate, NGL, and Natural Gas Prices*

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

Date	Oil, Condensate, and NGL (\$/bbl)	Natural Gas (\$/MMBtu)
2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90
2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for oil, condensate, and NGL and \$3.86 per MMBtu for natural gas. Oil and condensate prices were adjusted for gravity and local differential based on information provided by Antero. NGL price adjustments were provided by Antero and assume recovery of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price for oil and condensate was \$74.42 per barrel, \$19.80 per barrel of NGL, and \$3.39 per thousand cubic feet of gas.

*Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net proved reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbb), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	Ethane Recovery Forecast Price Sensitivity Case				
	Estimated by Antero				
	Net Proved Reserves and Present Worth at 10 Percent as of June 30, 2013				
Oil and Condensate (Mbb)	Natural Gas Liquids (Mbb)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)	
Audited by DeGolyer and MacNaughton	2,375	24,420	180,406	341,179	489,740
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Proved</b>	<b>2,375</b>	<b>24,420</b>	<b>180,406</b>	<b>341,179</b>	<b>489,740</b>

Notes:

1. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
2. Numbers may not add due to rounding.
3. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net proved reserves estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 1.73 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net proved reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive

and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 2.29 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Recovery Forecast Price Sensitivity Case.

DeGolyer and MacNaughton is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1936. DeGolyer and MacNaughton does not have any financial interest, including stock ownership, in Antero. Our fees were not contingent on the results of our evaluation. This letter report has been prepared at the request of Antero. DeGolyer and MacNaughton has used all data, assumptions, procedures, and methods that it considers necessary to prepare this report.

Very truly yours,

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.

Senior Vice President

DeGolyer and MacNaughton

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#### **CERTIFICATE of QUALIFICATION**

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

1. That I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report addressed to Antero dated July 24, 2013, and that I, as Senior Vice President, was responsible for the preparation of this report.
2. That I attended the University of Texas at Austin, and that I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers; and that I have in excess of 28 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.

Senior Vice President

DeGolyer and MacNaughton

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**DeGolyer and MacNaughton**  
5001 Spring Valley Road  
Suite 800 East  
Dallas, Texas 75244

July 24, 2013

Antero Resources Appalachian Corporation  
1625 17th Street  
Suite 300  
Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted an audit of the estimates of net probable crude oil, condensate, natural gas liquids (NGL), and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero Resources Appalachian Corporation (Antero) for working and royalty interests owned in Ohio. This evaluation was completed on July 24, 2013. Antero has represented that these properties account for 100 percent on a million cubic feet equivalent basis of Antero's net probable reserves in the Utica Shale in the Appalachian basin as of June 30, 2013. Antero has represented to us that these properties account for approximately 11.27 percent on a million cubic feet equivalent basis of Antero's net probable reserves as of June 30, 2013, and that the net probable reserves estimates have been prepared in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of June 30, 2013, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves included herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after June 30, 2013. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others. NGL have been estimated for certain properties and are based on the NGL yields provided by Antero and assume rejection of ethane during processing.

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Future gross revenue is that revenue which will accrue to the appraised interests from the production and sale of the estimated net reserves. Future net revenue is calculated by deducting production and ad valorem taxes, operating expenses, and capital costs from the future gross revenue. Present worth is defined as future net revenue discounted at a specified arbitrary rate compounded monthly over the expected period of realization.

At the request of Antero, we have prepared an audit of the estimates of net probable oil, condensate, NGL, and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties assuming recovery of ethane during NGL processing, referred to as the "Ethane Recovery Sensitivity Case." Given the volatility in ethane prices, both ethane rejection and ethane recovery cases were included as of June 30, 2013, to provide comparability between reserves and present worth at 10 percent. Additionally, at the request of Antero, we have prepared an audit of the estimates of net probable oil, condensate, NGL, and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties for the ethane rejection and ethane recovery cases at forecast prices, referred to as the "Ethane Rejection Forecast Price Sensitivity Case" and the "Ethane Recovery Forecast Price Sensitivity Case," respectively.

Estimates of oil, condensate, NGL, and natural gas reserves and associated revenue should be regarded only as estimates that may change as further production history and additional information become available. Not only are such reserves and revenue estimates based on that information which is currently available, but such estimates are also subject to the uncertainties inherent in the application of judgmental factors in interpreting such information.

Data used in this audit were obtained from reviews with Antero personnel, Antero files, from records on file with the appropriate regulatory agencies, and from public sources. In the preparation of this report we have relied, without independent verification, upon such information furnished by Antero with respect to property interests, production from such properties, current costs of operation and development, current prices for production, agreements relating to current and future operations and sale of production, and various other information and data that were accepted as represented. A field examination of the properties was not considered necessary for the purposes of this report.

### **Methodology and Procedures**

Estimates of reserves were prepared by the use of appropriate geological and engineering methods that are in accordance with practices generally recognized by the petroleum industry as presented in the publication of the Society of Petroleum Engineers entitled

“Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information (Revision as of February 19, 2007).” The method or combination of methods used in the analysis of each reservoir was tempered by experience with similar reservoirs, stage of development, quality and completeness of basic data, and production history. These assumptions, data, methods, and procedures are considered appropriate for the purpose for which this report has been prepared.

For depletion-type reservoirs or those whose performance disclosed a reliable decline in producing-rate trends or other diagnostic characteristics, reserves were estimated by the application of appropriate decline curves or other performance relationships. In the analyses of production-decline curves, reserves were estimated only to the limits of economic production or to the limit of the production licenses as appropriate.

Petroleum reserves estimated by Antero and by us are classified as probable and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net probable reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero’s methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the state in which the interest is located. Condensate reserves estimated herein are those to be recovered by conventional lease separation.

### **Definition of Reserves**

Petroleum reserves estimated by Antero included in this report are classified as probable. Only probable reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the SEC. Reserves are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classified as follows:

*Proved oil and gas reserves* — Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience,

engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and  
(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

*Probable reserves* — Probable reserves are those additional reserves that are less certain to be recovered than proved reserves but which, together with proved reserves, are as likely as not to be recovered.

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(i) When deterministic methods are used, it is as likely as not that actual remaining quantities recovered will exceed the sum of estimated proved plus probable reserves. When probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the proved plus probable reserves estimates.

(ii) Probable reserves may be assigned to areas of a reservoir adjacent to proved reserves where data control or interpretations of available data are less certain, even if the interpreted reservoir continuity of structure or productivity does not meet the reasonable certainty criterion. Probable reserves may be assigned to areas that are structurally higher than the proved area if these areas are in communication with the proved reservoir.

(iii) Probable reserves estimates also include potential incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than assumed for proved reserves.

(iv) See also guidelines in paragraphs (iv) and (vi) of the definition of possible reserves.

*Possible reserves* — Possible reserves are those additional reserves that are less certain to be recovered than probable reserves.

(i) When deterministic methods are used, the total quantities ultimately recovered from a project have a low probability of exceeding proved plus probable plus possible reserves. When probabilistic methods are used, there should be at least a 10% probability that the total quantities ultimately recovered will equal or exceed the proved plus probable plus possible reserves estimates.

(ii) Possible reserves may be assigned to areas of a reservoir adjacent to probable reserves where data control and interpretations of available data are progressively less certain. Frequently, this will be in areas where geoscience and

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engineering data are unable to define clearly the area and vertical limits of commercial production from the reservoir by a defined project.

(iii) Possible reserves also include incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than the recovery quantities assumed for probable reserves.

(iv) The proved plus probable and proved plus probable plus possible reserves estimates must be based on reasonable alternative technical and commercial interpretations within the reservoir or subject project that are clearly documented, including comparisons to results in successful similar projects.

(v) Possible reserves may be assigned where geoscience and engineering data identify directly adjacent portions of a reservoir within the same accumulation that may be separated from proved areas by faults with displacement less than formation thickness or other geological discontinuities and that have not been penetrated by a wellbore, and the registrant believes that such adjacent portions are in communication with the known (proved) reservoir. Possible reserves may be assigned to areas that are structurally higher or lower than the proved area if these areas are in communication with the proved reservoir.

(vi) Pursuant to paragraph (iii) of the proved oil and gas definition, where direct observation has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves should be assigned in the structurally higher portions of the reservoir above the HKO only if the higher contact can be established with reasonable certainty through reliable technology. Portions of the reservoir that do not meet this reasonable certainty criterion may be assigned as probable and possible oil or gas based on reservoir fluid properties and pressure gradient interpretations.

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*Developed oil and gas reserves* — Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

(i) Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and

(ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

*Undeveloped oil and gas reserves* — Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in [section 210.4—10 (a) Definitions], or by other evidence using reliable technology establishing reasonable certainty.

The extent to which probable reserves ultimately may be reclassified as proved reserves is dependent upon future drilling, testing, and well performance.

The degree of risk to be applied in evaluating probable reserves is influenced by economic and technological factors as well as the time element. Probable reserves in this report have not been adjusted in consideration of these additional risks and therefore are not comparable with proved reserves.

#### **Primary Economic Assumptions**

The following economic assumptions were used for estimating existing and future prices and costs:

##### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$81.05 per barrel. The resulting weighted-average price for NGL was \$48.12 per barrel.

##### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$3.10 per thousand cubic feet.

##### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant's ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the June 30, 2013, estimated oil and gas volumes. The reserves estimated in this report can be produced under current regulatory guidelines.

Antero has represented that estimated net probable reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of probable reserves of the SEC. Antero represents that its estimates of the net probable reserves attributable to these properties, which represent 11.27 percent of Antero's total probable reserves on a net equivalent basis, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):



**Net Probable Reserves and Present Worth at 10 Percent  
as of June 30, 2013**

	<b>Oil and Condensate (Mbbl)</b>	<b>Natural Gas Liquids (Mbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	12,430	54,386	1,180,624	1,581,517	1,870,883
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Probable</b>	<b>12,430</b>	<b>54,386</b>	<b>1,180,624</b>	<b>1,581,517</b>	<b>1,870,883</b>

Notes:

1. Probable reserves and values for probable reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In our opinion, the information relating to estimated probable reserves, estimated future net revenue from probable reserves, and present worth of estimated future net revenue from probable reserves of oil, condensate, natural gas liquids, and gas contained in this report has been prepared in accordance with Paragraphs 932-235-50-4, 932-235-50-6, 932-235-50-7, 932-235-50-9, 932-235-50-30, and 932-235-50-31(a), (b), and (c) of the Accounting Standards Update 932-235-50, *Extractive Industries — Oil and Gas (Topic 932): Oil and Gas Reserve Estimation and Disclosures* (January 2010) of the Financial Accounting Standards Board and Rules 4—10(a) (1)—(32) of Regulation S—X and Rules 302(b), 1201, 1202(a) (1), (2), (3), (4), (5), (8), and 1203(a) of Regulation S—K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein, (ii) estimates of the probable developed and probable undeveloped reserves are not presented at the beginning of the year, and (iii) the effective date of this report does not coincide with Antero's fiscal year.

To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necessarily unable to express an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net probable reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.04 percent when compared on a net gas equivalent basis. It is our opinion that there is no material difference between the net probable reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 3.09 percent overall difference. It is our opinion that there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for those properties we audited.

**Ethane Recovery Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net probable reserves for the Ethane Recovery Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The only adjustments made were to NGL yields and pricing to take into account ethane recovery and natural gas heating value adjustments. The following economic assumptions were used for estimating existing and future prices and costs for the Ethane Recovery Sensitivity Case:

*Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$81.05 per barrel. The resulting weighted-average price for NGL was \$21.64 per barrel.

*Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of

\$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$2.75 per thousand cubic feet.

*Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs

required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net probable reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Ethane Recovery Sensitivity Case</b>				
	<b>Estimated by Antero</b>				
	<b>Net Probable Reserves and Present Worth at 10 Percent</b>				
	<b>as of June 30, 2013</b>				
	<b>Oil and Condensate (Mbbbl)</b>	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	12,429	139,082	1,049,029	1,958,097	1,717,485
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Probable</b>	<b>12,429</b>	<b>139,082</b>	<b>1,049,029</b>	<b>1,958,097</b>	<b>1,717,485</b>

Notes:

1. Probable reserves and values for probable reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net probable reserves estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.15 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net probable reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in

total, for the properties reviewed, resulting in a 0.74 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case.

**Ethane Rejection Forecast Price Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net probable reserves for the Ethane Rejection Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane rejection. The following economic assumptions were used for estimating future prices and costs for the Ethane Rejection Forecast Price Sensitivity Case:

*Oil, Condensate, NGL, and Natural Gas Prices*

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

<b>Date</b>	<b>Oil, Condensate, and NGL (\$/bbl)</b>	<b>Natural Gas (\$/MMBtu)</b>

2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90
2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for oil, condensate, and NGL and \$3.86 per MMBtu for natural gas. Oil and condensate prices were adjusted for gravity and local differential based on information provided by Antero. NGL price adjustments were provided by Antero and assume rejection of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price for oil and condensate was \$72.17 per

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barrel, \$39.87 per barrel of NGL, and \$3.89 per thousand cubic feet of gas.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net probable reserves and present worth attributable to the properties audited, under the aforementioned Ethane Rejection Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Ethane Rejection Forecast Price Sensitivity Case</b>				
	<b>Estimated by Antero</b>				
	<b>Net Probable Reserves and Present Worth at 10 Percent</b>				
	<b>as of June 30, 2013</b>				
	<b>Oil and Condensate (Mbbbl)</b>	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>
Audited by DeGolyer and MacNaughton	12,431	54,394	1,180,944	1,581,894	1,995,377
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Probable</b>	<b>12,431</b>	<b>54,394</b>	<b>1,180,944</b>	<b>1,581,894</b>	<b>1,995,377</b>

#### Notes:

1. Probable reserves and values for probable reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net probable reserves estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.04 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between

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the net probable reserves estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 3.07 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case.

#### **Ethane Recovery Forecast Price Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net probable reserves for the Ethane Recovery Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane recovery. The following economic assumptions were used for estimating future prices and costs for the Ethane Recovery Forecast Sensitivity Price Case:

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

Date	Oil, Condensate, and NGL (\$/bbl)	Natural Gas (\$/MMBtu)
2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90
2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for oil, condensate, and NGL and \$3.86 per MMBtu for natural gas. Oil and condensate prices were adjusted for gravity and local differential based on information provided by Antero. NGL price adjustments were provided by Antero and

assume recovery of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price for oil and condensate was \$72.17 per barrel, \$18.35 per barrel of NGL, and \$3.08 per thousand cubic feet of gas.

*Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net probable reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	Ethane Recovery Forecast Price Sensitivity Case				
	Estimated by Antero				
	Net Probable Reserves and Present Worth at 10 Percent as of June 30, 2013				
Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)	
Audited by DeGolyer and MacNaughton	12,430	139,107	1,049,297	1,958,520	1,770,555
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Probable</b>	<b>12,430</b>	<b>139,107</b>	<b>1,049,297</b>	<b>1,958,520</b>	<b>1,770,555</b>

Notes:

1. Probable reserves and values for probable reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net probable reserves estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual

properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 0.22 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net probable reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 6.08 percent overall difference. It is our

opinion that for the audited properties difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Recovery Forecast Price Sensitivity Case appear reasonable.

DeGolyer and MacNaughton is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1936. DeGolyer and MacNaughton does not have any financial interest, including stock ownership, in Antero. Our fees were not contingent on the results of our evaluation. This letter report has been prepared at the request of Antero. DeGolyer and MacNaughton has used all data, assumptions, procedures, and methods that it considers necessary to prepare this report.

Very truly yours,

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

/s/ Gregory K. Graves, P.E.  
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Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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#### **CERTIFICATE of QUALIFICATION**

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

1. That I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report addressed to Antero dated July 24, 2013, and that I, as Senior Vice President, was responsible for the preparation of this report.
2. That I attended the University of Texas at Austin, and that I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers; and that I have in excess of 28 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.  
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Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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**DeGolyer and MacNaughton**  
5001 Spring Valley Road  
Suite 800 East  
Dallas, Texas 75244

July 24, 2013

Antero Resources Appalachian Corporation  
1625 17th Street  
Suite 300  
Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted an audit of the estimates of net possible crude oil, condensate, natural gas liquids (NGL), and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero Resources Appalachian Corporation (Antero) for working and royalty interests owned in Ohio. This evaluation was completed on July 24, 2013. Antero has represented that these properties account for 100 percent on a million cubic feet equivalent basis of Antero's net possible reserves in the Utica Shale in the Appalachian basin as of June 30, 2013, and that the net possible reserves estimates have been prepared in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of June 30, 2013, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves included herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after June 30, 2013. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others. NGL have been estimated for certain properties and are based on the NGL yields provided by Antero and assume rejection of ethane during processing.

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Future gross revenue is that revenue which will accrue to the appraised interests from the production and sale of the estimated net reserves. Future net revenue is calculated by deducting production and ad valorem taxes, operating expenses, and capital costs from the future gross revenue. Present worth is defined as future net revenue discounted at a specified arbitrary rate compounded monthly over the expected period of realization.

At the request of Antero, we have prepared an audit of the estimates of net possible oil, condensate, NGL, and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties assuming recovery of ethane during NGL processing, referred to as the "Ethane Recovery Sensitivity Case." Given the volatility in ethane prices, both ethane rejection and ethane recovery cases were included as of June 30, 2013, to provide comparability between reserves and present worth at 10 percent. Additionally, at the request of Antero, we have prepared an audit of the estimates of net possible oil, condensate, NGL, and natural gas reserves and present worth, as of June 30, 2013, prepared by the engineering staff of Antero for the same properties for the ethane rejection and ethane recovery cases at forecast prices, referred to as the "Ethane Rejection Forecast Price Sensitivity Case" and the "Ethane Recovery Forecast Price Sensitivity Case," respectively.

Estimates of oil, condensate, NGL, and natural gas reserves and associated revenue should be regarded only as estimates that may change as further production history and additional information become available. Not only are such reserves and revenue estimates based on that information which is currently available, but such estimates are also subject to the uncertainties inherent in the application of judgmental factors in interpreting such information.

Data used in this audit were obtained from reviews with Antero personnel, Antero files, from records on file with the appropriate regulatory agencies, and from public sources. In the preparation of this report we have relied, without independent verification, upon such information furnished by Antero with respect to property interests, production from such properties, current costs of operation and development, current prices for production, agreements relating to current and future operations and sale of production, and various other information and data that were accepted as represented. A field examination of the properties was not considered necessary for the purposes of this report.

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### **Methodology and Procedures**

Estimates of reserves were prepared by the use of appropriate geological and engineering methods that are in accordance with practices generally recognized by the petroleum industry as presented in the publication of the Society of Petroleum Engineers entitled "Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information (Revision as of February 19, 2007)." The method or combination of methods used in the analysis of each reservoir was tempered by experience with similar reservoirs, stage of

development, quality and completeness of basic data, and production history. These assumptions, data, methods, and procedures are considered appropriate for the purpose for which this report has been prepared.

For depletion-type reservoirs or those whose performance disclosed a reliable decline in producing-rate trends or other diagnostic characteristics, reserves were estimated by the application of appropriate decline curves or other performance relationships. In the analyses of production-decline curves, reserves were estimated only to the limits of economic production or to the limit of the production licenses as appropriate.

Petroleum reserves estimated by Antero and by us are classified as possible and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net possible reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero's methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the state in which the interest is located. Condensate reserves estimated herein are those to be recovered by conventional lease separation.

### **Definition of Reserves**

Petroleum reserves estimated by Antero included in this report are classified as possible. Only possible reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4—10(a) (1)—(32) of Regulation S—X of the SEC. Reserves are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classified as follows:

*Proved oil and gas reserves* — Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience,

engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and  
(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

*Probable reserves* — Probable reserves are those additional reserves that are less certain to be recovered than proved reserves but which, together with proved reserves, are as likely as not to be recovered.

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(i) When deterministic methods are used, it is as likely as not that actual remaining quantities recovered will exceed the sum of estimated proved plus probable reserves. When probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the proved plus probable reserves estimates.

(ii) Probable reserves may be assigned to areas of a reservoir adjacent to proved reserves where data control or interpretations of available data are less certain, even if the interpreted reservoir continuity of structure or productivity does not meet the reasonable certainty criterion. Probable reserves may be assigned to areas that are structurally higher than the proved area if these areas are in communication with the proved reservoir.

(iii) Probable reserves estimates also include potential incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than assumed for proved reserves.

(iv) See also guidelines in paragraphs (iv) and (vi) of the definition of possible reserves.

*Possible reserves* — Possible reserves are those additional reserves that are less certain to be recovered than probable reserves.

(i) When deterministic methods are used, the total quantities ultimately recovered from a project have a low probability of exceeding proved plus probable plus possible reserves. When probabilistic methods are used, there should be at least a 10% probability that the total quantities ultimately recovered will equal or exceed the proved plus probable plus possible reserves estimates.

(ii) Possible reserves may be assigned to areas of a reservoir adjacent to probable reserves where data control and interpretations of available data are progressively less certain. Frequently, this will be in areas where geoscience and

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engineering data are unable to define clearly the area and vertical limits of commercial production from the reservoir by a defined project.

(iii) Possible reserves also include incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than the recovery quantities assumed for probable reserves.

(iv) The proved plus probable and proved plus probable plus possible reserves estimates must be based on reasonable alternative technical and commercial interpretations within the reservoir or subject project that are clearly documented, including comparisons to results in successful similar projects.

(v) Possible reserves may be assigned where geoscience and engineering data identify directly adjacent portions of a reservoir within the same accumulation that may be separated from proved areas by faults with displacement less than formation thickness or other geological discontinuities and that have not been penetrated by a wellbore, and the registrant believes that such adjacent portions are in communication with the known (proved) reservoir. Possible reserves may be assigned to areas that are structurally higher or lower than the proved area if these areas are in communication with the proved reservoir.

(vi) Pursuant to paragraph (iii) of the proved oil and gas definition, where direct observation has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves should be assigned in the structurally higher portions of the reservoir above the HKO only if the higher contact can be established with reasonable certainty through reliable technology. Portions of the reservoir that do not meet this reasonable certainty criterion may be assigned as probable and possible oil or gas based on reservoir fluid properties and pressure gradient interpretations.

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*Developed oil and gas reserves* — Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

(i) Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and

(ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.



*Undeveloped oil and gas reserves* — Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in [section 210.4—10 (a) Definitions], or by other evidence using reliable technology establishing reasonable certainty.

The extent to which possible reserves ultimately may be reclassified as proved reserves is dependent upon future drilling, testing, and well performance.

The degree of risk to be applied in evaluating possible reserves is influenced by economic and technological factors as well as the time element. Possible reserves in this report have not been adjusted in consideration of these additional risks and therefore are not comparable with proved reserves.

**Primary Economic Assumptions**

The following economic assumptions were used for estimating existing and future prices and costs:

*Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$81.06 per barrel. The resulting weighted-average price for NGL was \$48.12 per barrel.

*Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$3.23 per thousand cubic feet.

*Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant’s ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the June 30, 2013, estimated oil and gas volumes. The reserves estimated in this report can be produced under current regulatory guidelines.

Antero has represented that estimated net possible reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of possible reserves of the SEC. Antero represents that its estimates of the net possible reserves attributable to these properties, which represent 100 percent of Antero’s total possible reserves in the Utica Shale on a net equivalent basis, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

**Estimated by Antero  
Net Possible Reserves and Present Worth at 10 Percent  
as of June 30, 2013**

	Natural Gas	Natural Gas	Gas	Present Worth at 10
<b>Oil and</b>				

	<u>Condensate (Mbbl)</u>	<u>Liquids (Mbbl)</u>	<u>Gas (MMcf)</u>	<u>Equivalent (MMcfe)</u>	<u>Percent (M\$)</u>
Audited by DeGolyer and MacNaughton	16,835	67,324	2,888,344	3,393,292	2,246,099
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Possible</b>	<b>16,835</b>	<b>67,324</b>	<b>2,888,344</b>	<b>3,393,292</b>	<b>2,246,099</b>

Notes:

1. Possible reserves and values for possible reserves have not been risked adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In our opinion, the information relating to estimated possible reserves, estimated future net revenue from possible reserves, and present worth of estimated future net revenue from possible reserves of oil, condensate, natural gas liquids, and gas contained in this report has been prepared in accordance with Paragraphs 932-235-50-4, 932-235-50-6, 932-235-50-7, 932-235-50-9, 932-235-50-30, and 932-235-50-31(a), (b), and (c) of the Accounting Standards Update 932-235-50, *Extractive Industries — Oil and Gas (Topic 932): Oil and Gas Reserve Estimation and Disclosures* (January 2010) of the Financial Accounting Standards Board and Rules 4—10(a) (1)—(32) of Regulation S—X and Rules 302(b), 1201, 1202(a) (1), (2), (3), (4), (5), (8), and 1203(a) of Regulation S—K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein, (ii) estimates of the possible developed and possible undeveloped reserves are not presented at the beginning of the year, and (iii) the effective date of this report does not coincide with Antero's fiscal year.

To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necessarily unable to express an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net possible reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 2.04 percent when compared on a net gas equivalent basis. It is our opinion that there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 4.26 percent overall difference. It is our opinion that there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for those properties we audited.

### Ethane Recovery Sensitivity Case

The aforementioned methodology and procedures were used to determine estimates of net possible reserves for the Ethane Recovery Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The only adjustments made were to NGL yields and pricing to take into account ethane recovery and natural gas heating value adjustments. The following economic assumptions were used for estimating existing and future prices and costs for the Ethane Recovery Sensitivity Case:

#### *Oil, Condensate, and NGL Prices*

Antero has represented that the oil, condensate, and NGL prices were based on a reference price, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The resulting weighted-average price for oil and condensate was \$81.06 per barrel. The resulting weighted-average price for NGL was \$22.04 per barrel.

#### *Natural Gas Prices*

Antero has represented that the natural gas prices were based on Columbia Gas Transmission Appalachia index pricing, calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month within the 12-month period prior to the end of the reporting period, unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the reference price of \$3.43 per million British thermal units (MMBtu) and held constant thereafter. The resulting weighted average price was \$3.07 per thousand cubic feet.

#### *Operating Expenses and Capital Costs*

required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net possible reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Ethane Recovery Sensitivity Case</b>				
	<b>Estimated by Antero</b>				
	<b>Net Possible Reserves and Present Worth at 10 Percent as of June 30, 2013</b>				
<b>Oil and Condensate (Mbbbl)</b>	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>	
Audited by DeGolyer and MacNaughton	16,833	168,408	2,731,183	3,842,631	2,086,915
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Possible</b>	<b>16,833</b>	<b>168,408</b>	<b>2,731,183</b>	<b>3,842,631</b>	<b>2,086,915</b>

Notes:

1. Possible reserves and values for possible reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net possible reserves estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 1.04 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be

compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 2.66 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Recovery Sensitivity Case.

#### **Ethane Rejection Forecast Price Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net possible reserves for the Ethane Rejection Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane rejection. The following economic assumptions were used for estimating future prices and costs for the Ethane Rejection Forecast Price Sensitivity Case:

##### *Oil, Condensate, NGL, and Natural Gas Prices*

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

<b>Date</b>	<b>Oil, Condensate, and NGL (\$/bbl)</b>	<b>Natural Gas (\$/MMBtu)</b>
2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90

2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for oil, condensate, and NGL and \$3.86 per MMBtu for natural gas. Oil and condensate prices were adjusted for gravity and local differential based on information provided by Antero. NGL price adjustments were provided by Antero and assume rejection of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price for oil and condensate was \$70.66 per

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barrel, \$39.78 per barrel of NGL, and \$4.03 per thousand cubic feet of gas.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net possible reserves and present worth attributable to the properties audited, under the aforementioned Ethane Rejection Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	<b>Ethane Rejection Forecast Price Sensitivity Case</b>				
	<b>Estimated by Antero</b>				
	<b>Net Possible Reserves and Present Worth at 10 Percent as of June 30, 2013</b>				
<b>Oil and Condensate (Mbbbl)</b>	<b>Natural Gas Liquids (Mbbbl)</b>	<b>Natural Gas (MMcf)</b>	<b>Gas Equivalent (MMcfe)</b>	<b>Present Worth at 10 Percent (M\$)</b>	
Audited by DeGolyer and MacNaughton	16,836	67,337	2,891,152	3,396,191	2,694,590
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Possible</b>	<b>16,836</b>	<b>67,337</b>	<b>2,891,152</b>	<b>3,396,191</b>	<b>2,694,590</b>

#### Notes:

1. Possible reserves and values for possible reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

In comparing the detailed net possible reserves estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in

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an overall difference of 2.03 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Rejection Forecast Price Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 4.02 percent overall difference. It is our opinion that for the audited properties there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Rejection Forecast Price Sensitivity Case.

#### **Ethane Recovery Forecast Price Sensitivity Case**

The aforementioned methodology and procedures were used to determine estimates of net possible reserves for the Ethane Recovery Forecast Price Sensitivity Case. There were no changes to the number of locations evaluated, operating expenses, capital costs, or abandonment costs. The NGL yields and gas heating value adjustments assume ethane recovery. The following economic assumptions were used for estimating future prices and costs for the Ethane Recovery Forecast Sensitivity Price Case:

#### *Oil, Condensate, NGL, and Natural Gas Prices*

Prices were provided by Antero as shown in the following table, expressed in dollars per barrel (\$/bbl) and dollars per MMBtu (\$/MMBtu):

Date	Oil, Condensate, and NGL (\$/bbl)	Natural Gas (\$/MMBtu)
2013	85.37	3.48
2014	80.42	3.69
2015	75.76	3.90
2016	72.76	4.05
2017 and thereafter	70.88	4.19

As of June 30, 2013, the 5-year average prices were \$77.04 per barrel for oil, condensate, and NGL and \$3.86 per MMBtu for

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natural gas. Oil and condensate prices were adjusted for gravity and local differential based on information provided by Antero. NGL price adjustments were provided by Antero and assume recovery of ethane during processing. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero. The resulting weighted average price for oil and condensate was \$70.70 per barrel, \$18.69 per barrel of NGL, and \$3.63 per thousand cubic feet of gas.

#### *Operating Expenses and Capital Costs*

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

Antero represents that its estimates of the net possible reserves and present worth attributable to the properties audited, under the aforementioned Ethane Recovery Forecast Price Sensitivity Case assumptions, are as follows, expressed in thousands of barrels (Mbbbl), millions of cubic feet (MMcf), millions of cubic feet equivalent (MMcfe), and thousands of dollars (M\$):

	Ethane Recovery Forecast Price Sensitivity Case				
	Estimated by Antero Net Possible Reserves and Present Worth at 10 Percent as of June 30, 2013				
	Oil and Condensate (Mbbbl)	Natural Gas Liquids (Mbbbl)	Natural Gas (MMcf)	Gas Equivalent (MMcfe)	Present Worth at 10 Percent (M\$)
Audited by DeGolyer and MacNaughton	16,834	168,443	2,733,902	3,845,565	2,460,480
Not Audited by DeGolyer and MacNaughton	0	0	0	0	0
<b>Total Utica Possible</b>	<b>16,834</b>	<b>168,443</b>	<b>2,733,902</b>	<b>3,845,565</b>	<b>2,460,480</b>

#### Notes:

1. Possible reserves and values for possible reserves have not been risk adjusted to make them comparable to proved reserves.
2. Liquids are converted to gas equivalent using a factor of 6,000 cubic feet of gas equivalent per 1 barrel.
3. Numbers may not add due to rounding.
4. Future income taxes were not taken into account in the preparation of the estimates of present worth.

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In comparing the detailed net possible reserves estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive and negative, in reserves estimates for individual properties. These differences appear to be compensating to a great extent when considering the reserves of Antero, in total, for the properties reviewed, resulting in an overall difference of 1.12 percent when compared on a net gas equivalent basis. It is our opinion that for the audited properties there is no material difference between the net possible reserves estimates prepared by Antero and those prepared by us for the Ethane Recovery Forecast Price Sensitivity Case. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero for the Ethane Recovery Forecast Price Sensitivity Case, we have found differences, both positive and negative, in present worth estimates for individual properties. These differences appear to be compensating to a great extent when considering the present worth of Antero, in total, for the properties reviewed, resulting in a 5.97 percent overall difference. It is our opinion that for the audited properties there is a reasonable difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for the Ethane Recovery Forecast Price Sensitivity Case.

DeGolyer and MacNaughton is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1936. DeGolyer and MacNaughton does not have any financial interest, including stock ownership, in Antero. Our fees were not contingent on the results of our evaluation. This letter report has been prepared at the request of Antero. DeGolyer and MacNaughton has used all data, assumptions, procedures, and methods that it considers necessary to prepare this report.

Very truly yours,

DeGOLYER and MacNAUGHTON  
Texas Registered Engineering Firm F-716

/s/ Gregory K. Graves, P.E.  
Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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#### **CERTIFICATE of QUALIFICATION**

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

1. That I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report addressed to Antero dated July 24, 2013, and that I, as Senior Vice President, was responsible for the preparation of this report.
2. That I attended the University of Texas at Austin, and that I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers; and that I have in excess of 28 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.  
Gregory K. Graves, P.E.  
Senior Vice President  
DeGolyer and MacNaughton

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