

PART II

Item 5. *Market for Registrant’s Shares, Related Shareholder Matters and Issuer Purchases of Equity Securities*

Our Class A shares are listed and traded on the New York Stock Exchange (“NYSE”) under the symbol “PAGP.” As of February 12, 2016, the closing market price for our Class A shares was \$6.04 per share and there were approximately 29,000 record holders and beneficial owners (held in street name). As of February 12, 2016, there were 244,203,443 Class A shares outstanding.

The following table sets forth high and low sales prices for our Class A shares and the cash distributions declared per Class A share for the periods indicated:

	Class A share Price Range		Cash Distributions ⁽¹⁾	
	High	Low		
2015				
4th Quarter	\$ 19.49	\$ 7.18	\$	0.23100
3rd Quarter	\$ 26.64	\$ 16.28	\$	0.23100
2nd Quarter	\$ 29.87	\$ 25.81	\$	0.22700
1st Quarter	\$ 28.96	\$ 24.01	\$	0.22200
2014				
4th Quarter	\$ 30.75	\$ 22.51	\$	0.20300
3rd Quarter	\$ 32.26	\$ 28.48	\$	0.19075
2nd Quarter	\$ 32.58	\$ 27.00	\$	0.18340
1st Quarter	\$ 29.00	\$ 24.38	\$	0.17055

⁽¹⁾ Cash distributions associated with the quarter presented. These distributions were declared and paid in the following calendar quarter. See the “Cash Distribution Policy” section below for a discussion of our policy regarding distribution payments.

Our Class B shares are not listed or traded on any stock exchange.

Our Class A shares are also used as a form of compensation to our employees and directors. Additional information regarding our equity-indexed compensation plans is included in Part III of this report under Item 13. “Certain Relationships and Related Transactions, and Director Independence.”

See Item 12. “Security Ownership of Certain Beneficial Owners and Management and Related Shareholder Matters” for information regarding securities authorized for issuance under equity compensation plans.

Cash Distribution Policy

Our partnership agreement requires that, within 55 days following the end of each quarter, we distribute all of our available cash to Class A shareholders of record on the applicable record date. Available cash generally means, for any quarter ending prior to liquidation, all cash on hand at the date of determination of available cash for the distribution in respect of such quarter (including expected distributions from AAP in respect of such quarter), less the amount of cash reserves established by our general partner, which will not be subject to a cap, to:

- comply with applicable law or any agreement binding upon us or our subsidiaries (exclusive of PAA and its subsidiaries);
- provide funds for distributions to shareholders;
- provide for future capital expenditures, debt service and other credit needs as well as any federal, state, provincial or other income tax that may affect us in the future;
- permit us to pay a ratable amount to AAP as necessary to permit AAP to make required capital contributions to PAA to maintain PAA GP’s 2% general partner interest upon the issuance of additional partnership securities by PAA; or
- provide for the proper conduct of our business;

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As of December 31, 2015, our only cash-generating assets consisted of our indirect partnership interests in PAA through our approximate 38% limited partner interest in AAP. AAP currently receives all of its cash flows from its direct ownership of all of PAA's IDRs and its indirect ownership of the 2% general partner interest in PAA. Therefore, our cash flow and resulting ability to make distributions will be completely dependent upon the ability of PAA to make distributions to AAP in respect of those partnership interests. The actual amount of cash that PAA, and correspondingly AAP, will have available for distribution will primarily depend on the amount of cash PAA generates from its operations. Also, under the terms of the agreements governing AAP and PAA's debt, they are prohibited from declaring or paying any distribution to unitholders if a default or event of default (as defined in such agreements) exists. No such default has occurred. See Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Credit Agreements, PAA Commercial Paper Program and Indentures."

In January 2016, PAA completed the private placement of approximately 61.0 million Series A Convertible Preferred Units representing limited partner interests in PAA (the "PAA preferred units"). The PAA preferred units rank senior to all classes or series of equity securities in PAA with respect to distribution rights. AAP will be entitled to participate in distributions on the PAA preferred units equal to its 2% general partner interest in PAA.

Although not required to do so, in response to past requests by PAA management in connection with PAA's acquisition activities, AAP has, from time to time, agreed to reduce the amounts due to it as incentive distributions. Such modifications were implemented with a view toward enhancing PAA's competitiveness for such acquisitions and managing the overall cost of equity capital while achieving an appropriate balance between short-term and long-term accretion to PAA's limited partners and the holders of its general partner interest and IDRs. During 2015, 2014 and 2013, AAP's incentive distributions were reduced by approximately \$22 million, \$23 million and \$15 million, respectively. These reductions were agreed to in connection with the BP NGL Acquisition and the PNG Merger. In addition, AAP has agreed to reduce the amount of its incentive distribution by \$5.0 million per quarter in 2016 and \$3.75 million per quarter thereafter. See Note 1 to our Consolidated Financial Statements for further discussion of the PNG Merger. In connection with PAA's January 2016 private placement of preferred units, AAP agreed to further modify its IDRs such that when the PAA preferred units convert into PAA common units, the IDRs associated with the resulting PAA common units will only participate in distribution growth above an annualized PAA distribution level of \$2.80 per converted PAA common unit. See Note 10 to our Consolidated Financial Statements for further discussion of PAA's preferred unit issuance.

Recent Sales of Unregistered Securities

In connection with our IPO and related transactions, the former owners of Plains All American GP LLC (the "Legacy Owners") acquired the following interests (collectively, the "Stapled Interests"): (i) AAP units representing an economic limited partner interest in AAP; (ii) general partner units representing a non-economic membership interest in our general partner; and (iii) Class B shares representing a non-economic limited partner interest in us. The Legacy Owners and any permitted transferees of their Stapled Interests have the right to exchange (the "Exchange Right") all or a portion of such Stapled Interests for an equivalent number of Class A shares. In connection with the exercise of the Exchange Right, the Stapled Interests are transferred to us and the applicable Class B shares are canceled. Although we issue one Class A share for each Stapled Interest that is exchanged, we also receive one AAP unit and one general partner unit. As a result, the exercise by Legacy Owners of the Exchange Right is not dilutive. During the three months ended December 31, 2015, certain Legacy Owners or their permitted transferees exercised the Exchange Right, which resulted in the issuance of 2,074,022 Class A shares. The issuance of Class A shares in connection with the exercise of the Exchange Rights was exempt from the registration requirements of the Securities Act of 1933, as amended, pursuant to Section 4(2) thereof.

Issuer Purchases of Equity Securities

We did not repurchase any of our Class A shares during the fourth quarter of 2015, and we do not have any announced or existing plans to repurchase any of our Class A shares.

Item 6. *Selected Financial Data*

The following tables set forth selected historical consolidated financial and other information for PAGP as of the dates and for the periods indicated. The selected consolidated statements of operations data for the year ended December 31, 2013 include results attributable to PAGP from October 21, 2013 (the date of closing PAGP's IPO) through December 31, 2013, plus results for Plains All American GP LLC ("GP LLC"), the predecessor entity to PAGP, prior to October 21, 2013.

The selected historical statements of operations and cash flow data for the years ended December 31, 2015, 2014, 2013, 2012 and 2011 and balance sheet data as of December 31, 2015, 2014, 2013 and 2012 is derived from the audited financial statements of

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PAGP (and GP LLC as discussed above) included elsewhere in this document. The selected balance sheet data as of December 31, 2011 is derived from the unaudited financial statements of GP LLC that are not included elsewhere in this document.

The selected financial data should be read in conjunction with the Consolidated Financial Statements, including the notes thereto, and Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

Amounts for 2011 through 2014 have been retroactively restated to reflect the impact of our adoption of revised debt issuance costs guidance issued by the Financial Accounting Standards Board (“FASB”). See Note 2 to our Consolidated Financial Statements for additional information.

	Year Ended December 31,				
	2015	2014	2013	2012	2011
(in millions, except per unit data)					
Statement of operations data:					
Total revenues	\$ 23,152	\$ 43,464	\$ 42,249	\$ 37,797	\$ 34,275
Operating income	\$ 1,258	\$ 1,791	\$ 1,734	\$ 1,433	\$ 1,305
Net income	\$ 809	\$ 1,328	\$ 1,374	\$ 1,118	\$ 987
Net income attributable to PAGP	\$ 118	\$ 70	\$ 15	\$ 3	\$ 2
Per unit data:					
Basic net income per Class A share ⁽¹⁾	\$ 0.53	\$ 0.48	\$ 0.10	N/A	N/A
Diluted net income per Class A share ⁽¹⁾	\$ 0.53	\$ 0.47	\$ 0.10	N/A	N/A
Declared distributions per common unit ⁽²⁾	\$ 0.88	\$ 0.67	N/A	N/A	N/A
Balance sheet data (at end of period):					
Property and equipment, net	\$ 13,493	\$ 12,292	\$ 10,841	\$ 9,664	\$ 7,763
Total assets	\$ 24,142	\$ 23,923	\$ 21,411	\$ 19,219	\$ 15,388
Long-term debt	\$ 10,932	\$ 9,238	\$ 7,188	\$ 6,480	\$ 4,694
Total debt	\$ 11,931	\$ 10,525	\$ 8,301	\$ 7,566	\$ 5,380
Partners’ capital / Members’ equity:					
Partners’ capital / Members’ equity (excluding Noncontrolling interests)	\$ 1,762	\$ 1,657	\$ 1,035	\$ —	\$ —
Noncontrolling interests	\$ 7,472	\$ 7,724	\$ 7,244	\$ 6,968	\$ 5,794
Total Partners’ capital / Members’ equity	\$ 9,234	\$ 9,381	\$ 8,279	\$ 6,968	\$ 5,794
Other data:					
Net cash provided by operating activities	\$ 1,333	\$ 1,988	\$ 1,948	\$ 1,232	\$ 2,357
Net cash used in investing activities	\$ (2,530)	\$ (3,296)	\$ (1,653)	\$ (3,392)	\$ (2,020)
Net cash provided by/(used in) financing activities	\$ 827	\$ 1,672	\$ (274)	\$ 2,159	\$ (337)
Capital expenditures:					
Acquisition capital	\$ 105	\$ 1,099	\$ 19	\$ 2,286	\$ 1,404
Expansion capital	\$ 2,170	\$ 2,026	\$ 1,622	\$ 1,185	\$ 531
Maintenance capital	\$ 220	\$ 224	\$ 176	\$ 170	\$ 120

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	Year Ended December 31,				
	2015	2014	2013	2012	2011
Volumes ⁽³⁾ (4)					
Transportation segment (average daily volumes in thousands of barrels per day):					
Tariff activities	4,340	3,952	3,595	3,373	2,942
Trucking	113	127	117	106	105
Transportation segment total volumes	4,453	4,079	3,712	3,479	3,047
Facilities segment:					
Crude oil, refined products and NGL terminalling and storage (average monthly capacity in millions of barrels)	100	95	94	90	70
Rail load / unload volumes (average volumes in thousands of barrels per day)	210	231	221	—	—
Natural gas storage (average monthly working capacity in billions of cubic feet)	97	97	96	84	71
NGL fractionation (average volumes in thousands of barrels per day)	103	96	96	79	14
Facilities segment total volumes (average monthly volumes in millions of barrels)	126	121	120	106	82
Supply and Logistics segment (average daily volumes in thousands of barrels per day):					
Crude oil lease gathering purchases	943	949	859	818	742
NGL sales	223	208	215	182	103
Waterborne cargos	2	—	4	3	21
Supply and Logistics segment total volumes	1,168	1,157	1,078	1,003	866

- (1) Basic and diluted net income per Class A share for 2013 were calculated based on net income attributable to PAGP for the period following the closing of our initial public offering on October 21, 2013 and basic weighted average Class A shares outstanding weighted for the same period.
- (2) Represents cash distributions declared and paid during the year presented.
- (3) Average volumes are calculated as the total volumes (attributable to our interest) for the year divided by the number of days or months in the year.
- (4) Facilities segment total is calculated as the sum of: (i) crude oil, refined products and NGL terminalling and storage capacity; (ii) rail load and unload volumes multiplied by the number of days in the year and divided by the number of months in the year; (iii) natural gas storage working capacity divided by 6 to account for the 6:1 thousand cubic feet (“mcf”) of natural gas to crude British thermal unit (“Btu”) equivalent ratio and further divided by 1,000 to convert to monthly volumes in millions; and (iv) NGL fractionation volumes multiplied by the number of days in the year and divided by the number of months in the year.

Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations

Introduction

The following discussion is intended to provide investors with an understanding of our financial condition and results of our operations, including periods prior to the closing of our IPO on October 21, 2013. Such analysis should be read in conjunction with our historical consolidated financial statements and accompanying notes. For ease of reference, we refer to the historical results of Plains All American GP LLC (“GP LLC”) prior to our IPO as being “our” historical financial results. Unless the context otherwise requires, references to “we,” “us,” “our,” and “PAGP” are intended to mean the business and operations of PAGP and its consolidated subsidiaries since October 21, 2013. When used in the historical context (i.e. prior to October 21, 2013), these terms are intended to mean the business and operations of GP LLC and its consolidated subsidiaries.

Our discussion and analysis includes the following:

- Executive Summary
- Acquisitions and Capital Projects
- Critical Accounting Policies and Estimates
- Recent Accounting Pronouncements
- Results of Operations
- Outlook
- Liquidity and Capital Resources

Executive Summary

Company Overview

We are a Delaware limited partnership formed on July 17, 2013 to own an interest in the general partner and incentive distribution rights (“IDRs”) of Plains All American Pipeline, L.P (“PAA”), a publicly traded Delaware limited partnership. Although we were formed as a limited partnership, we have elected to be taxed as a corporation for United States federal income tax purposes. As of December 31, 2015, we owned an approximate 38% limited partner interest in AAP, and the remaining limited partner interests in AAP were held by the owners of AAP immediately prior to our IPO (the “Legacy Owners”). AAP is a Delaware limited partnership that directly owns all of PAA’s incentive distribution rights and indirectly owns the 2% general partner interest in PAA. AAP is the sole member of PAA GP LLC (“PAA GP”), a Delaware limited liability company that directly holds the 2% general partner interest in PAA.

Through a series of transactions prior to our IPO with our general partner and the owners of GP LLC, a Delaware limited liability company formed on May 2, 2001 that manages the business and affairs of PAA and AAP, GP LLC’s general partner interest in AAP became a non-economic interest, and we became the owner of a 100% managing member interest in GP LLC. Since we are the managing member of and control GP LLC, which in turn effectively controls PAA, we reflect our ownership in PAA, as well as its subsidiaries, on a consolidated basis in accordance with generally accepted accounting principles. Accordingly, our financial results are combined with those of GP LLC and PAA as well as with their subsidiaries. As such, our results of operations as discussed below do not differ materially from the results of operations of PAA.

PAA owns and operates midstream energy infrastructure and provides logistics services for crude oil, NGL, natural gas and refined products. PAA owns an extensive network of pipeline transportation, terminalling, storage, and gathering assets in key crude oil and NGL producing basins and transportation corridors and at major market hubs in the United States and Canada.

Overview of Operating Results, Capital Investments and Other Significant Activities

Primarily as a result of advances in drilling and completion techniques and their application to a number of large-scale shale and resource plays, which occurred contemporaneously with attractive petroleum prices, during the approximately three year period through the end of 2014, U.S. crude oil and liquids production in the lower 48 states increased rapidly. Additionally, during this period, the crude oil market experienced high levels of volatility in location and quality differentials as a result of the confluence of regional infrastructure constraints in North America, rapid and unexpected changes in crude oil qualities, international supply issues, and regional downstream operating issues. During 2014 (albeit to a lesser degree than previous years), these market conditions had a positive impact on our profitability as our business strategy and asset base positioned us to capitalize on opportunities created by the volatile environment. However, the combination during such period of surging North American liquids production, relatively flat liquids production for the rest of the world and relatively modest growth in global liquids demand led to a supply imbalance, which in turn led to a significant and rapid reduction in petroleum prices during the second half of 2014 and throughout 2015.

While we believe that our business model and asset base have minimal direct exposure to petroleum prices, our performance is influenced by certain differentials and overall North American production levels, which in turn are impacted by major price movements. The meaningful decrease in crude oil price levels during the second half of 2014 and throughout 2015 relative to the levels experienced during 2013 and the first half of 2014 have led many producers, including North American producers, to significantly scale back capital programs. As a result, during 2015, the rate of growth of North American crude oil production slowed significantly and began to decrease in some areas as producers have taken rigs out of service and deferred completions at an increased rate. The slowdown in North American production coupled with increases in infrastructure led to a compression of basis differentials in a number of locations. This transitioning crude oil market created a challenging environment for our business model and asset base in 2015. We recognized net income of \$809 million in 2015 as compared to net income of \$1.328 billion recognized in 2014. The year-over-year decrease was driven by:

- Lower operating results, primarily from our Supply and Logistics segment, as increased competition and compressed differentials from the market conditions discussed above drove lower unit margins in this part of our business. See further discussion of our segment operating results in the “—Results of Operations—Analysis of Operating Segments” section below;
- Costs and lost revenue associated with the Line 901 incident; and
- Higher depreciation and amortization expense and interest expense associated with our growing asset base and related financing activities; partially offset by
- Lower income tax expense resulting from the deferred income tax impact associated with fluctuations in the derivative mark-to-market valuation in our Canadian operations.

We executed a \$2.2 billion capital program during 2015. We expect the majority of the capital invested will contribute to growth in our fee-based Transportation and Facilities segments in future years. To fund the 2015 capital expansion activities, PAA executed multiple financings, including raising an aggregate of approximately \$2.1 billion of long-term debt and equity capital. In addition, we paid approximately \$1.7 billion of cash distributions to our Class A shareholders and noncontrolling interests during 2015.

Acquisitions and Capital Projects

We completed a number of acquisitions and capital projects in 2015, 2014 and 2013 that have impacted our results of operations. The following table summarizes our expenditures for acquisition capital, expansion capital and maintenance capital for the periods indicated (in millions):

	Year Ended December 31,		
	2015	2014	2013
Acquisition capital ^{(1) (2)}	\$ 105	\$ 1,099	\$ 19
Expansion capital ⁽³⁾	2,170	2,026	1,622
Maintenance capital ⁽³⁾	220	224	176
	<u>\$ 2,495</u>	<u>\$ 3,349</u>	<u>\$ 1,817</u>

- (1) Acquisitions of initial investments or additional interests in unconsolidated entities are included in “Acquisition capital.” Subsequent contributions to unconsolidated entities related to expansion projects of such entities are recognized in “Expansion capital.” We account for our investments in such entities under the equity method of accounting.
- (2) Excludes the PNG Merger completed on December 31, 2013, as we historically consolidated PNG into our financial statements for financial reporting purposes in accordance with GAAP. As consideration for the PNG Merger, we issued approximately 14.7 million PAA common units with a value of approximately \$760 million. See Note 1 to our Consolidated Financial Statements for further discussion of the PNG Merger.
- (3) Capital expenditures made to expand the existing operating and/or earnings capacity of our assets are classified as expansion capital. Capital expenditures for the replacement of partially or fully depreciated assets in order to maintain the operating and/or earnings capacity of our existing assets are classified as maintenance capital.

Acquisitions

Acquisitions are financed using a combination of equity and debt, including borrowings under the PAA commercial paper program or credit facilities and the issuance of PAA senior notes. Businesses acquired impact our results of operations commencing on the closing date of each acquisition. Our acquisition and capital expansion activities are discussed further in “—Liquidity and Capital Resources.” Information regarding acquisitions completed in 2015, 2014 and 2013 is set forth in the table below (in millions):

Acquisition	Effective Date	Acquisition Price	Operating Segment
2015 Total	Various	\$ 105	Transportation and Facilities
BridgeTex Acquisition (50% interest) ⁽¹⁾	11/14/2014	\$ 1,088	Transportation
Other	Various	11	Facilities
2014 Total		\$ 1,099	
2013 Total ⁽²⁾	09/01/2013	\$ 19	Transportation

- (1) We account for our 50% interest in BridgeTex under the equity method of accounting. See Note 7 to our Consolidated Financial Statements for further discussion of our equity method investments.
- (2) Excludes the PNG Merger completed on December 31, 2013, as we historically consolidated PNG into our financial statements for financial reporting purposes in accordance with GAAP. As consideration for the PNG Merger, we issued approximately 14.7 million PAA common units with a value of approximately \$760 million. See Note 1 to our Consolidated Financial Statements for further discussion of the PNG Merger.

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Expansion Capital Projects

Our 2015 projects primarily included the construction and expansion of pipeline systems and storage and terminal facilities. The following table summarizes our 2015, 2014 and 2013 projects (in millions):

Projects	2015	2014	2013
Permian Basin Area Projects ⁽¹⁾	\$ 470	\$ 378	\$ 59
Rail Terminal Projects ⁽²⁾	294	239	149
Fort Saskatchewan Facility Projects / NGL Line ⁽¹⁾	272	142	73
Red River Pipeline (Cushing to Longview) ⁽¹⁾	143	—	—
Cactus Pipeline ⁽¹⁾	134	350	64
Saddlehorn Pipeline ^{(1) (3)}	103	—	—
Eagle Ford JV Project ^{(1) (4)}	93	117	60
Cowboy Pipeline (Cheyenne to Carr) ⁽¹⁾	47	—	—
Eagle Ford Area Projects ⁽⁵⁾	45	10	86
St. James Terminal Expansions ⁽¹⁾	45	25	51
Cushing Terminal Expansions ⁽¹⁾	39	13	38
Diamond Pipeline ^{(1) (4)}	6	29	3
Mississippian Lime Pipeline	—	58	163
Pascagoula Pipeline	—	26	125
Other Projects	479	639	751
Total	<u>\$ 2,170</u>	<u>\$ 2,026</u>	<u>\$ 1,622</u>

- (1)

These projects will continue into 2016. See “—Liquidity and Capital Resources—Acquisitions, Capital Expenditures and Distributions Paid to Our Class A Shareholders and Noncontrolling Interests—2016 Capital Projects.”
- (2)

Includes railcar purchases, as well as rail projects near St. James, LA; Tampa, CO; Bakersfield, CA; Carr, CO; Manitou, ND; Van Hook, ND; Yorktown, VA; and Kerrobert, Canada rail projects.
- (3)

Represents contributions related to our 40% investment interest in Saddlehorn.
- (4)

Represents contributions related to our 50% investment interest.
- (5)

Includes pipeline, tankage and condensate stabilization.

The overall increase in our expansion capital expenditures over the periods presented was primarily driven by our investment in midstream infrastructure projects to address the need for additional takeaway capacity in regions impacted by the increase in crude oil and liquids-rich gas production growth in North America, as well as the long-term needs of both the upstream and downstream sectors of the crude oil space. A majority of the expansion capital spent in the years presented was invested in our fee-based Transportation and Facilities segments.

We currently expect to spend approximately \$1.5 billion for expansion capital in 2016. See “—Liquidity and Capital Resources—Acquisitions, Capital Expenditures and Distributions Paid to Our Class A Shareholders and Noncontrolling Interests—2016 Capital Projects” and “—Outlook” for additional information.

Critical Accounting Policies and Estimates

Critical Accounting Policies

We have adopted various accounting policies to prepare our consolidated financial statements in accordance with GAAP. These critical accounting policies are discussed in Note 2 to our Consolidated Financial Statements.

Critical Accounting Estimates

The preparation of financial statements in conformity with GAAP and rules and regulations of the SEC requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, as well as the disclosure of contingent assets and liabilities, at the date of the financial statements. Such estimates and assumptions also affect the reported amounts of revenues and expenses during the reporting period. Although we believe these estimates are reasonable, actual results could differ from these estimates. On a regular basis, we evaluate our assumptions, judgments and estimates. We also discuss our critical accounting policies and estimates with the Audit Committee of the Board of Directors.

We believe that the assumptions, judgments and estimates involved in the accounting for our (i) purchase and sales accruals, (ii) estimated fair value of assets and liabilities acquired and identification of associated goodwill and intangible assets, (iii) fair value of derivatives, (iv) accruals and contingent liabilities, (v) equity-indexed compensation plan accruals, (vi) property and equipment, depreciation expense and asset retirement obligations, (vii) allowance for doubtful accounts and (viii) inventory valuations have the greatest potential impact on our Consolidated Financial Statements. These areas are key components of our results of operations and are based on complex rules which require us to make judgments and estimates, so we consider these to be our critical accounting estimates. Such critical accounting estimates are discussed further as follows:

Purchase and Sales Accruals. We routinely make accruals based on estimates for certain components of our revenues and purchases and related costs due to the timing of compiling billing information, receiving third-party information and reconciling our records with those of third parties. Where applicable, these accruals are based on nominated volumes expected to be purchased, transported and subsequently sold. Uncertainties involved in these estimates include levels of production at the wellhead, access to certain qualities of crude oil, pipeline capacities and delivery times, utilization of truck fleets to transport volumes to their destinations, weather, market conditions and other forces beyond our control. These estimates are generally associated with a portion of the last month of each reporting period. For the year ended December 31, 2015, we estimate that approximately 2% of annual revenues and purchases and related costs were recorded using sales and purchase estimates. Accordingly, a hypothetical variance of 10% from both of these estimates, either up or down in tandem, would impact annual revenues, purchases and related costs, operating income and net income by less than 1% on an annual basis. Although the resolution of these uncertainties has not historically had a material impact on our reported results of operations or financial condition, because of the high volume, low margin nature of our business, we cannot provide assurance that actual amounts will not vary significantly from estimated amounts. Variances from estimates are reflected in the period actual results become known, typically in the month following the estimate.

Fair Value of Assets and Liabilities Acquired and Identification of Associated Goodwill and Intangible Assets. In accordance with FASB guidance regarding business combinations, with each acquisition, we allocate the cost of the acquired entity to the assets and liabilities assumed based on their estimated fair values at the date of acquisition. If the initial accounting for the business combination is incomplete when the combination occurs, an estimate will be recorded. Any subsequent adjustments to this estimate, if material, will be recognized retroactive to the date of acquisition. With exception to acquisitions of equity method investments, we also expense the transaction costs as incurred in connection with each acquisition. In addition, we are required to recognize intangible assets separately from goodwill. Intangible assets with finite lives are amortized over their estimated useful life as determined by management. Goodwill and intangible assets with indefinite lives are not amortized but instead are periodically assessed for impairment.

Determining the fair value of assets and liabilities acquired, as well as intangible assets that relate to such items as customer relationships, contracts and industry expertise, involves professional judgment and is ultimately based on acquisition models and management's assessment of the value of the assets acquired and, to the extent available, third party assessments. Impairment testing entails estimating future net cash flows relating to the business, based on management's estimate of future revenues, future cash flows and market conditions including pricing, demand, competition, operating costs and other factors, such as weighted average cost of capital. Uncertainties associated with these estimates include changes in production decline rates, production interruptions, fluctuations in refinery capacity or product slates, economic obsolescence factors in the area and potential future sources of cash flow. Although the resolution of these uncertainties has not historically had a material impact on our results of operations or financial condition, we cannot provide assurance that actual amounts will not vary significantly from estimated amounts. Further, significant negative variances in the assumptions and estimates utilized in our forecasts, such as a continued decline in petroleum commodity prices or a sustained multi-year low petroleum commodity price environment that results in lower volumes and cash flows or further increases in our weighted average cost of capital assumption, could result in reporting unit carrying values in excess of fair values. See Note 6 to our Consolidated Financial Statements for a further discussion of goodwill.

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Fair Value of Derivatives. The fair value of a derivative at a particular period end does not reflect the end results of a particular transaction, and will most likely not reflect the gain or loss at the conclusion of a transaction. We reflect estimates for these items based on our internal records and information from third parties. The valuations of our derivatives that are exchange traded are based on market prices on the applicable exchange on the last day of the period. For our derivatives that are not exchange traded, the estimates we use are based on indicative broker quotations or an internal valuation model. Our valuation models utilize market observable inputs such as price, volatility, correlation and other factors and may not be reflective of the price at which they can be settled due to the lack of a liquid market. Less than 1% of total annual revenues are based on estimates derived from internal valuation models. Although the resolution of these uncertainties has not historically had a material impact on our results of operations or financial condition, we cannot provide assurance that actual amounts will not vary significantly from estimated amounts. See Note 11 to our Consolidated Financial Statements for a discussion regarding our derivatives and risk management activities.

Accruals and Contingent Liabilities. We record accruals or liabilities for, among other things, environmental remediation, natural resource damage assessments, governmental fines and penalties, potential legal claims and fees for legal services associated with loss contingencies, and bonuses. Accruals are made when our assessment indicates that it is probable that a liability has occurred and the amount of liability can be reasonably estimated. Our estimates are based on all known facts at the time and our assessment of the ultimate outcome. Among the many uncertainties that impact our estimates are the necessary regulatory approvals for, and potential modification of, our environmental remediation plans, the limited amount of data available upon initial assessment of the impact of soil or water contamination, changes in costs associated with environmental remediation services and equipment, the duration of the natural resource damage assessment and the ultimate amount of damages determined, the determination and calculation of fines and penalties, the possibility of existing legal claims giving rise to additional claims and the nature, extent and cost of legal services that will be required in connection with lawsuits, claims and other matters. Our estimates for contingent liability accruals are increased or decreased as additional information is obtained or resolution is achieved. A hypothetical variance of 5% in our aggregate estimate for the accruals and contingent liabilities discussed above would have an impact on earnings of up to approximately \$14 million. Although the resolution of these uncertainties has not historically had a material impact on our results of operations or financial condition, we cannot provide assurance that actual amounts will not vary significantly from estimated amounts.

Equity-Indexed Compensation Plan Accruals. We accrue compensation expense (referred to herein as equity-indexed compensation expense) for outstanding equity-indexed compensation awards. Under GAAP, we are required to estimate the fair value of our outstanding equity-indexed compensation awards and recognize that fair value as compensation expense over the service period. For equity-indexed compensation awards that contain a performance condition, the fair value of the award is recognized as equity-indexed compensation expense only if the attainment of the performance condition is considered probable. Uncertainties involved in this estimate include the actual unit price at time of vesting, whether or not a performance condition will be attained and the continued employment of personnel with outstanding equity-indexed compensation awards. We cannot provide assurance that the actual fair value of our equity-indexed compensation awards will not vary significantly from estimated amounts.

We recognized equity-indexed compensation expense of \$27 million, \$99 million and \$116 million in 2015, 2014 and 2013, respectively, related to awards granted under our various equity-indexed compensation plans. A hypothetical variance of 5% in our aggregate estimate for the equity-indexed compensation expense would have an impact on net income of less than 1%. See Note 15 to our Consolidated Financial Statements for a discussion regarding our equity-indexed compensation plans.

Property and Equipment, Depreciation Expense and Asset Retirement Obligations. We compute depreciation using the straight-line method based on estimated useful lives. These estimates are based on various factors including condition, manufacturing specifications, technological advances and historical data concerning useful lives of similar assets. Uncertainties that impact these estimates include changes in laws and regulations relating to restoration and abandonment requirements, economic conditions and supply and demand in the area. When assets are put into service, we make estimates with respect to useful lives and salvage values that we believe are reasonable. However, subsequent events could cause us to change our estimates, thus impacting the future calculation of depreciation and amortization.

We record retirement obligations associated with tangible long-lived assets based on estimates related to the costs associated with cleaning, purging and in some cases, completely removing the assets and returning the land to its original state. In addition, our estimates include a determination of the settlement date or dates for the potential obligation, which may or may not be determinable. Uncertainties that impact these estimates include the costs associated with these activities and the timing of incurring such costs.

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We periodically evaluate property and equipment for impairment when events or circumstances indicate that the carrying value of these assets may not be recoverable. Any evaluation is highly dependent on the underlying assumptions of related cash flows. We consider the fair value estimate used to calculate impairment of property and equipment a critical accounting estimate. In determining the existence of an impairment of carrying value, we make a number of subjective assumptions as to:

- whether there is an event or circumstance that may be indicative of an impairment;
- the grouping of assets;
- the intention of “holding”, “abandoning” or “selling” an asset;
- the forecast of undiscounted expected future cash flow over the asset’s estimated useful life; and
- if an impairment exists, the fair value of the asset or asset group.

We did not recognize any material impairment of long-lived assets during the three years ending December 31, 2015. See Note 5 to our Consolidated Financial Statements for further discussion regarding impairments.

Allowance for Doubtful Accounts. We perform credit evaluations of our customers and grant credit based on past payment history, financial conditions and anticipated industry conditions. Customer payments are regularly monitored and a provision for doubtful accounts is established based on specific situations and overall industry conditions. Our history of bad debt losses has been minimal (less than \$2 million in the aggregate over the years ended December 31, 2015, 2014 and 2013) and generally limited to specific customer circumstances; however, credit risks can change suddenly and without notice. See Note 2 to our Consolidated Financial Statements for additional discussion.

Inventory Valuations. Inventory, including long-term inventory, primarily consists of crude oil, NGL and natural gas and is valued at the lower of cost or market, with cost determined using an average cost method within specific inventory pools. At the end of each reporting period, we assess the carrying value of our inventory and use estimates and judgment when making any adjustments necessary to reduce the carrying value to net realizable value. Among the uncertainties that impact our estimates are the applicable quality and location differentials to include in our net realizable value analysis. Additionally, we estimate the upcoming liquidation timing of the inventory. Changes in assumptions made as to the timing of a sale can materially impact net realizable value. During the years ended December 31, 2015, 2014 and 2013, we recorded charges of \$117 million, \$289 million and \$7 million, respectively, related to the valuation adjustment of our crude oil, NGL and natural gas inventory due to declines in prices. See Note 4 to our Consolidated Financial Statements for further discussion regarding inventory.

Recent Accounting Pronouncements

See Note 2 to our Consolidated Financial Statements for information regarding the effect of recent accounting pronouncements on our consolidated financial statements, including the impact of our adoption of revised debt issuance costs guidance on prior period financial statements.

Results of Operations

The following table sets forth an overview of our consolidated financial results calculated in accordance with GAAP (in millions, except per share amounts):

	Year Ended December 31,			Favorable/(Unfavorable) Variance			
				2015-2014		2014-2013	
	2015	2014	2013	\$	%	\$	%
Transportation segment profit	\$ 917	\$ 925	\$ 729	\$ (8)	(1)%	\$ 196	27%
Facilities segment profit	579	584	616	(5)	(1)%	(32)	(5)%
Supply and Logistics segment profit	381	782	822	(401)	(51)%	(40)	(5)%
Total segment profit	1,877	2,291	2,167	(414)	(18)%	124	6%
Unallocated general and administrative expenses	(3)	(6)	(1)	3	50%	(5)	(500)%
Depreciation and amortization	(433)	(386)	(368)	(47)	(12)%	(18)	(5)%
Interest expense, net	(443)	(357)	(319)	(86)	(24)%	(38)	(12)%
Other income/(expense), net	(7)	(2)	1	(5)	(250)%	(3)	(300)%
Income tax expense	(182)	(212)	(106)	30	14%	(106)	(100)%
Net income	809	1,328	1,374	(519)	(39)%	(46)	(3)%
Net income attributable to noncontrolling interests	(691)	(1,258)	(1,359)	567	45%	101	7%
Net income attributable to PAGP	\$ 118	\$ 70	\$ 15	\$ 48	69%	\$ 55	367%
Basic net income per Class A share ⁽¹⁾	\$ 0.53	\$ 0.48	\$ 0.10	\$ 0.05	10%	\$ 0.38	380%
Diluted net income per Class A share ⁽¹⁾	\$ 0.53	\$ 0.47	\$ 0.10	\$ 0.06	13%	\$ 0.37	370%
Basic weighted average Class A shares outstanding ⁽¹⁾	222	145	132	77	53%	13	10%
Diluted weighted average Class A shares outstanding ⁽¹⁾	222	650	132	(428)	(66)%	518	392%

⁽¹⁾ For the 2013 period, basic and diluted net income per Class A share were calculated based on net income attributable to PAGP for the period following the closing of our initial public offering on October 21, 2013 and basic weighted average Class A shares outstanding weighted for the same period.

Analysis of Operating Segments

We manage our operations through three operating segments: Transportation, Facilities and Supply and Logistics. Our Chief Operating Decision Maker (our Chief Executive Officer) evaluates segment performance based on a variety of measures including segment profit, segment volumes, segment profit per barrel and maintenance capital investment. See Note 18 to our Consolidated Financial Statements for a definition of segment profit (including an explanation of why this is a performance measure) and a reconciliation of segment profit to net income attributable to PAGP.

Our segment analysis involves an element of judgment relating to the allocations between segments. In connection with its operations, the Supply and Logistics segment secures transportation and facilities services from our other two segments as well as third-party service providers under month-to-month and multi-year arrangements. Intersegment transportation service rates are conducted at posted tariff rates, rates similar to those charged to third parties or rates that we believe approximate market. Facilities segment services are also obtained at rates generally consistent with rates charged to third parties for similar services; however, certain terminalling and storage rates are discounted to our Supply and Logistics segment to reflect the fact that these services may be canceled on short notice to enable the Facilities segment to provide services to third parties. Intersegment activities are eliminated in consolidation and we believe that the estimates with respect to these rates are reasonable. Also, our segment operating and general and administrative expenses reflect direct costs attributable to each segment; however, we also allocate certain operating expenses and general and administrative overhead expenses between segments based on management’s assessment of the business activities for the period. The proportional allocations by segment require judgment by management and may be adjusted in the future based on the business activities that exist during each period. We believe that the estimates with respect to these allocations are reasonable.

Revenues and expenses from our Canadian based subsidiaries, which use CAD as their functional currency, are translated at the prevailing average exchange rates for each month.

Transportation Segment

Our Transportation segment operations generally consist of fee-based activities associated with transporting crude oil and NGL on pipelines, gathering systems, trucks and barges. The Transportation segment generates revenue through a combination of tariffs, third-party pipeline capacity agreements and other transportation fees.

The following tables set forth our operating results from our Transportation segment for the periods indicated:

Operating Results ⁽¹⁾ (in millions, except per barrel data)	Year Ended December 31,			Favorable/(Unfavorable) Variance			
				2015-2014		2014-2013	
	2015	2014	2013	\$	%	\$	%
Revenues							
Tariff activities	\$ 1,439	\$ 1,447	\$ 1,293	\$ (8)	(1)%	\$ 154	12%
Trucking	155	208	205	(53)	(25)%	3	1%
Total transportation revenues	1,594	1,655	1,498	(61)	(4)%	157	10%
Costs and Expenses							
Trucking costs	(108)	(151)	(147)	43	28%	(4)	(3)%
Field operating costs ⁽²⁾	(652)	(560)	(528)	(92)	(16)%	(32)	(6)%
Equity-indexed compensation expense - operations	(5)	(15)	(18)	10	67%	3	17%
Segment general and administrative expenses ^{(2) (3)}	(89)	(83)	(101)	(6)	(7)%	18	18%
Equity-indexed compensation expense - general and administrative	(6)	(29)	(39)	23	79%	10	26%
Equity earnings in unconsolidated entities	183	108	64	75	69%	44	69%
Segment profit	\$ 917	\$ 925	\$ 729	\$ (8)	(1)%	\$ 196	27%
Maintenance capital	\$ 144	\$ 165	\$ 123	\$ 21	13%	\$ (42)	(34)%
Segment profit per barrel	\$ 0.56	\$ 0.62	\$ 0.54	\$ (0.06)	(10)%	\$ 0.08	15%

Average Daily Volumes (in thousands of barrels per day) ⁽⁴⁾	Year Ended December 31,			Favorable/(Unfavorable) Variance			
				2015-2014		2014-2013	
	2015	2014	2013	Volumes	%	Volumes	%
Tariff activities volumes							
Crude oil pipelines (by region):							
Permian Basin ⁽⁵⁾	1,849	1,512	1,299	337	22%	213	16%
South Texas / Eagle Ford ⁽⁵⁾	306	227	102	79	35%	125	123%
Western	215	260	247	(45)	(17)%	13	5%
Rocky Mountain ⁽⁵⁾	440	426	398	14	3%	28	7%
Gulf Coast	532	492	442	40	8%	50	11%
Central	413	450	405	(37)	(8)%	45	11%
Canada	392	399	384	(7)	(2)%	15	4%
Crude oil pipelines	4,147	3,766	3,277	381	10%	489	15%
NGL pipelines	193	186	250	7	4%	(64)	(26)%
Refined products pipelines	—	—	68	—	N/A	(68)	(100)%
Tariff activities total volumes	4,340	3,952	3,595	388	10%	357	10%
Trucking volumes	113	127	117	(14)	(11)%	10	9%
Transportation segment total volumes	4,453	4,079	3,712	374	9%	367	10%

(1) Revenues and costs and expenses include intersegment amounts.

(2) Field operating costs and Segment general and administrative expenses exclude equity-indexed compensation expense, which is presented separately in the table above.

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- (3) Segment general and administrative expenses reflect direct costs attributable to each segment and an allocation of other expenses to the segments. The proportional allocations by segment require judgment by management and are based on the business activities that exist during each period.
- (4) Average daily volumes are calculated as the total volumes (attributable to our interest) for the year divided by the number of days in the year.
- (5) Area systems include volumes (attributable to our interest) from pipelines owned by unconsolidated entities.

Tariffs and other fees on our pipeline systems vary by receipt point and delivery point. The segment profit generated by our tariff and other fee-related activities depends on the volumes transported on the pipeline and the level of the tariff and other fees charged as well as the fixed and variable field costs of operating the pipeline. As is common in the pipeline transportation industry, our tariffs incorporate a loss allowance factor that is intended to offset losses due to evaporation, measurement and other losses in transit. We value the variance of allowance volumes to actual losses at the estimated net realizable value (including the impact of gains and losses from derivative-related activities) at the time the variance occurred and the result is recorded as either an increase or decrease to tariff activities revenues. Revenue from our pipeline capacity agreements generally reflects a negotiated amount.

The following is a discussion of items impacting Transportation segment profit and segment profit per barrel for the periods indicated.

Net Operating Revenues, Equity Earnings and Volumes. As noted in the table above, our total Transportation segment revenues, net of trucking costs, decreased for the year ended December 31, 2015 compared to the year ended December 31, 2014, but increased for the year ended December 31, 2014 compared to the year ended December 31, 2013. Equity earnings in unconsolidated entities and average daily volumes increased year-over-year for each of the comparative periods presented. The following table presents the net revenue and equity earnings variances by type of revenue, product and region for the comparative periods presented:

(in millions)	Favorable/(Unfavorable) Variance 2015 - 2014		Favorable/(Unfavorable) Variance 2014 - 2013	
	Net Revenues	Equity Earnings	Net Revenues	Equity Earnings
Tariff activities:				
Permian Basin region	\$ 75	\$ 52	\$ 66	\$ 9
South Texas / Eagle Ford region	12	19	24	28
Western region	(24)	—	3	—
Canada	(16)	—	40	—
NGL pipelines	(1)	—	(14)	—
Refined products pipelines	—	—	(28)	—
Other (including pipeline loss allowance revenue)	(54)	4	63	7
Tariff activities total	(8)	75	154	44
Trucking	(10)	—	(1)	—
Transportation segment total	<u>\$ (18)</u>	<u>\$ 75</u>	<u>\$ 153</u>	<u>\$ 44</u>

- Tariff activities —
- Permian Basin region.

The increase in revenues for 2015 over 2014 was primarily driven by results from (i) our Cactus pipeline, which was placed in service in April 2015, and (ii) higher volumes related to increased production, primarily associated with the expansion of our pipeline system in the Delaware Basin.

Revenues increased for 2014 over 2013 primarily due to (i) higher volumes related to increased production and new pipeline connections and (ii) higher pumpover movements at our Basin pipeline terminal.

The increase in equity earnings for each of the comparative periods presented was driven by earnings from our interest in BridgeTex, which we acquired in November 2014.
- South Texas / Eagle Ford region.

Revenues increased for each of the comparative periods due to higher volumes driven by increased production and the extension of our gathering system.

Equity earnings increased for each of the comparative periods presented due to higher earnings from our interest in Eagle Ford Pipeline LLC, primarily driven by higher throughput on the Eagle Ford pipeline system. The higher throughput in 2015 compared to 2014 was due to a combination of (i) the connection to our Cactus pipeline in April

2015, (ii) the completion of an expansion of the pipeline system in August 2015 and (iii) increased crude oil production in the Eagle Ford region. The higher throughput for 2014 compared to 2013 was primarily due to increased crude oil production in the Eagle Ford region.

- *Western region.* Revenues and volumes decreased for 2015 as compared to 2014 primarily due to pipeline downtime on our All American Pipeline associated with the Line 901 incident that occurred in the second quarter of 2015. See Note 16 to our Consolidated Financial Statements for additional information regarding this incident.
- *Canada.* Revenues decreased for 2015 as compared to 2014 due to unfavorable foreign exchange impacts of \$38 million, which more than offset revenue increases from higher tariff rates on certain of our pipelines and related system assets.

Revenues increased for 2014 over 2013 primarily due to (i) rate increases on certain of our pipelines and related system assets, (ii) additional revenues from a reclassification of certain storage facilities from our Facilities segment to our Transportation segment during the second quarter of 2014, (iii) higher revenues from our Rangeland and South Saskatchewan pipelines, as they were shut down in the second and third quarters of 2013 due to high river flow rates and flooding in the surrounding area and (iv) incremental volumes and revenues from our Wascana pipeline, which was reactivated during the second quarter of 2014 and was connected to our Bakken North pipeline system. Such increases were partially offset by unfavorable foreign exchange impacts of \$16 million.

- *NGL pipelines.* Revenues and volumes from our NGL pipelines were relatively consistent for 2015 compared to 2014, as higher revenue from tariff rate increases was substantially offset by unfavorable foreign exchange impacts of \$12 million.

Revenues and volumes from our NGL pipelines decreased for 2014 as compared to 2013 primarily due to (i) the discontinuation of a capacity lease arrangement in the fourth quarter of 2013, (ii) the impact of netting joint venture related volumes to our share on a pipeline during 2014, which did not affect revenues and (iii) estimated unfavorable foreign exchange impacts of \$7 million. Such unfavorable impacts were partially offset by higher revenues from our Co-Ed pipeline due to tariff rate increases and the shutdown of the pipeline in the second and third quarters of 2013 due to high river flow rates and flooding in the surrounding area.

- *Refined products pipelines.* We sold our refined products pipeline systems and related assets in 2013.
- *Other.* The variances for the comparative periods presented were primarily related to pipeline loss allowance revenue. Loss allowance revenue decreased by \$62 million for 2015 compared to 2014 primarily due to a lower average realized price per barrel, partially offset by higher volumes. Loss allowance revenue increased by \$46 million for 2014 over 2013 and was primarily driven by higher volumes.
- *Trucking —* Net revenues from our trucking operations decreased for 2015 as compared to 2014 due to unfavorable foreign exchange impacts of \$8 million and lower producer volumes.

Field Operating Costs. The increase in field operating costs (excluding equity-indexed compensation expense) for the year ended December 31, 2015 compared to the year ended December 31, 2014 was primarily due to estimated costs of \$83 million recognized during 2015 associated with the Line 901 incident, net of amounts we believe are probable of recovery from insurance. See Note 16 to our Consolidated Financial Statements for additional information regarding this incident. The increase in field operating costs was also driven by (i) higher salary and related expenses and property tax expense primarily associated with new assets placed in service in 2015 and (ii) higher maintenance and repairs cost, partially offset by favorable foreign exchange impacts of \$22 million.

Field operating costs (excluding equity-indexed compensation expense) increased during the year ended December 31, 2014 compared to the year ended December 31, 2013 primarily due to (i) a change in classification of \$14 million of certain costs from general and administrative expenses, (ii) increased asset integrity spending, (iii) higher property tax expense due to capital expansion and (iv) higher utility costs associated with increased throughput volumes. Such increases were partially offset by a reduction in environmental remediation costs and an \$11 million favorable foreign exchange impact.

General and Administrative Expenses. The increase in general and administrative expenses (excluding equity-indexed compensation expenses) for the year ended December 31, 2015 over the year ended December 31, 2014 was primarily due to

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increased salaries, benefits and other costs associated with the growth in the segment, partially offset by a \$4 million favorable foreign exchange impact.

General and administrative expenses (excluding equity-indexed compensation expenses) decreased during the year ended December 31, 2014 compared to the year ended December 31, 2013 due to a change in classification of \$14 million of certain costs to field operating costs and a \$5 million favorable impact of foreign exchange.

Equity-Indexed Compensation Expense. A majority of our equity-indexed compensation awards (including the AAP Management Units) contain performance conditions contingent upon achieving certain distribution levels. For awards with performance conditions (such as distribution targets), expense is accrued over the service period only if the performance condition is considered probable of occurring. When awards with performance conditions that were previously considered improbable become probable, we incur additional expense in the period that our probability assessment changes. This is necessary to bring the accrued liability associated with these awards up to the level it would have been if we had been accruing for these awards since the grant date. At December 31, 2015, a PAA distribution level of \$2.90 per common unit was deemed probable of occurring in the reasonably foreseeable future (and was initially determined to be probable in the fourth quarter of 2014). Furthermore, a change in PAA unit price impacts the fair value of our liability-classified awards. See Note 15 to our Consolidated Financial Statements for additional information regarding our equity-indexed compensation plans.

On a consolidated basis, equity-indexed compensation expense decreased by \$72 million for the year ended December 31, 2015 compared to the year ended December 31, 2014, primarily due to the impact of the decrease in PAA unit price during the year ended December 31, 2015 compared to the impact of the decrease in PAA unit price during the year ended December 31, 2014. On a consolidated basis, equity-indexed compensation expense decreased by \$17 million for the year ended December 31, 2014 compared to the year ended December 31, 2013 primarily due to the impact of the decrease in PAA unit price during the year ended December 31, 2014 compared to the impact of the increase in PAA unit price during the year ended December 31, 2013.

Maintenance Capital. Maintenance capital consists of capital expenditures for the replacement of partially or fully depreciated assets in order to maintain the operating and/or earnings capacity of our existing assets. The decrease in maintenance capital in 2015 compared to 2014 was primarily due to a reclassification of certain maintenance capital costs from our Facilities segment during the 2014 period. In addition, the decrease in maintenance capital was impacted by the depreciation of CAD relative to USD.

The increase in maintenance capital in 2014 compared to 2013 was primarily due to pipeline replacement projects and increased investments in pipeline integrity and a reclassification of certain maintenance capital costs from our Facilities segment during the 2014 period.

Facilities Segment

Our Facilities segment operations generally consist of fee-based activities associated with providing storage, terminalling and throughput services for crude oil, refined products, NGL and natural gas, as well as NGL fractionation and isomerization services and natural gas and condensate processing services. The Facilities segment generates revenue through a combination of month-to-month and multi-year agreements and processing arrangements.

The following tables set forth our operating results from our Facilities segment for the periods indicated:

Operating Results ⁽¹⁾ (in millions, except per barrel data)	Year Ended December 31,			Favorable/(Unfavorable) Variance			
				2015-2014		2014-2013	
	2015	2014	2013	\$	%	\$	%
Revenues	\$ 1,050	\$ 1,127	\$ 1,075	\$ (77)	(7)%	\$ 52	5%
Natural gas sales ⁽²⁾	—	—	302	—	N/A	(302)	(100)%
Natural gas related storage costs	(24)	(55)	(16)	31	56%	(39)	(244)%
Natural gas sales costs ⁽²⁾	—	—	(296)	—	N/A	296	100%
Field operating costs ⁽³⁾	(377)	(404)	(362)	27	7%	(42)	(12)%
Equity-indexed compensation expense - operations	—	(4)	(2)	4	100%	(2)	(100)%
Segment general and administrative expenses ^{(3) (4)}	(65)	(60)	(63)	(5)	(8)%	3	5%
Equity-indexed compensation expense - general and administrative	(5)	(20)	(22)	15	75%	2	9%
Segment profit	\$ 579	\$ 584	\$ 616	\$ (5)	(1)%	\$ (32)	(5)%
Maintenance capital	\$ 68	\$ 52	\$ 38	\$ (16)	(31)%	\$ (14)	(37)%
Segment profit per barrel	\$ 0.38	\$ 0.40	\$ 0.43	\$ (0.02)	(5)%	\$ (0.03)	(7)%

Volumes ⁽⁵⁾	Year Ended December 31,			Favorable/(Unfavorable) Variance			
				2015-2014		2014-2013	
	2015	2014	2013	Volumes	%	Volumes	%
Crude oil, refined products and NGL terminalling and storage (average monthly capacity in millions of barrels)	100	95	94	5	5%	1	1%
Rail load / unload volumes (average volumes in thousands of barrels per day)	210	231	221	(21)	(9)%	10	5%
Natural gas storage (average monthly working capacity in billions of cubic feet)	97	97	96	—	—%	1	1%
NGL fractionation (average volumes in thousands of barrels per day)	103	96	96	7	7%	—	—%
Facilities segment total volumes (average monthly volumes in millions of barrels) ⁽⁶⁾	126	121	120	5	4%	1	1%

(1) Revenues and costs and expenses include intersegment amounts.

(2) Effective January 1, 2014, our natural gas sales and costs, primarily attributable to the activities performed by our natural gas storage commercial optimization group, are reported in our Supply and Logistics segment.

(3) Field operating costs and Segment general and administrative expenses exclude equity-indexed compensation expense, which is presented separately in the table above.

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- (4) Segment general and administrative expenses reflect direct costs attributable to each segment and an allocation of other expenses to the segments. The proportional allocations by segment require judgment by management and are based on the business activities that exist during each period.
- (5) Average monthly volumes are calculated as total volumes for the year divided by the number of months in the year.
- (6) Facilities segment total is calculated as the sum of: (i) crude oil, refined products and NGL terminalling and storage capacity; (ii) rail load and unload volumes multiplied by the number of days in the year and divided by the number of months in the year; (iii) natural gas storage working capacity divided by 6 to account for the 6:1 mcf of natural gas to crude Btu equivalent ratio and further divided by 1,000 to convert to monthly volumes in millions; and (iv) NGL fractionation volumes multiplied by the number of days in the year and divided by the number of months in the year.

The following is a discussion of items impacting Facilities segment profit and segment profit per barrel for the periods indicated.

Net Operating Revenues and Volumes. As noted in the table above, our Facilities segment revenues, net of related costs, decreased by \$46 million for the year ended December 31, 2015 compared to the year ended December 31, 2014, but increased by \$7 million for the year ended December 31, 2014 over the comparable 2013 period. Total volumes increased for each of the comparative periods presented. Variances in net revenues and average monthly volumes between the comparative periods are discussed below:

- Rail Terminals — For the year ended December 31, 2015, revenues decreased by \$26 million compared to the year ended December 31, 2014 due to lower volumes and lower rail fees related to the movement of certain volumes of Bakken crude oil, partially offset by revenues from our Bakersfield rail terminal that came online in the fourth quarter of 2014.

For the year ended December 31, 2014, revenues increased by \$3 million over the year ended December 31, 2013 due to new rail terminals that came on line in the fourth quarter of 2013 and in 2014, substantially offset by the unfavorable impact of rail delays and lower volumes at certain of our existing rail terminals during 2014 and weather-related issues at certain of our terminals during the first quarter of 2014.

- Natural Gas Storage Operations — Net revenues decreased by \$12 million for the year ended December 31, 2015 compared to the year ended December 31, 2014 and by \$43 million for the year ended December 31, 2014 compared to the year ended December 31, 2013 primarily due to (i) declines in market rates for natural gas storage, which resulted in lower rates on new contracts replacing expiring contracts and (ii) reduced hub services opportunities. The 2014 period was further unfavorably impacted by costs incurred to manage deliverability requirements in conjunction with the extended period of severe cold weather experienced during the first quarter of 2014.
- Gulf Coast Gas Processing — Revenues decreased by \$13 million for the year ended December 31, 2015 compared to 2014 primarily due to lower volumes and decreased margins driven by lower commodity prices.
- NGL Storage, NGL Fractionation and Canadian Gas Processing — Revenues decreased by \$7 million for the year ended December 31, 2015 compared to the year ended December 31, 2014. This decrease was primarily due to estimated unfavorable foreign exchange impacts of \$41 million, which offset revenue increases from higher facility fees for the 2015 period. These impacts were largely offset in our Supply and Logistics segment results.

Revenues from our NGL storage, NGL fractionation and Canadian gas processing activities increased by \$31 million for the year ended December 31, 2014 over the year ended December 31, 2013 largely driven by higher facility fee revenues due to rate increases at certain of our storage and fractionation facilities, partially offset by lower physical processing gains. Such increases were partially offset by estimated unfavorable foreign exchange impacts of \$18 million. These impacts were largely offset in our Supply and Logistics segment results.

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- **Crude Oil Storage** — For the year ended December 31, 2015, revenues increased by \$9 million over the year ended December 31, 2014 primarily due to capacity expansions of approximately 1 million barrels and higher marine access activity at our St. James terminal.

For the year ended December 31, 2014, crude oil storage revenues increased by \$8 million over the year ended December 31, 2013 primarily due to increased throughput at our Cushing, Yorktown and Mobile/Ten Mile terminals and a 1.2 million barrel capacity expansion at our St. James terminal, partially offset by lower revenues from certain storage facilities in California and the East Coast due to underutilization resulting from decreased demand, as well decreased revenues of \$12 million due to the reclassification of certain of our Canadian storage facilities to our Transportation segment during the second quarter of 2014.

- **Condensate Processing** — Revenues increased by \$8 million for the year ended December 31, 2014 compared to 2013 due to the benefit from the start-up and subsequent expansion of our Gardendale condensate processing facility. Revenues were relatively consistent for the year ended December 31, 2015 compared to the year ended December 31, 2014.

Field Operating Costs. The decrease in field operating costs (excluding equity-indexed compensation expenses) for the year ended December 31, 2015 compared to the year ended December 31, 2014 was primarily due to (i) decreased maintenance and repairs cost, (ii) lower gas and power costs largely associated with our NGL fractionation and Canadian gas processing activities and (iii) favorable foreign exchange impacts of \$19 million. Such decreases were partially offset by an increase in expenses associated with new assets placed in service.

Field operating costs (excluding equity-indexed compensation expenses) increased during the year ended December 31, 2014 compared to the year ended December 31, 2013 due to (i) an increase in costs for rail activities, primarily due to new rail terminals that came online in the fourth quarter of 2013 and in 2014 as discussed above, (ii) a change in classification of \$8 million of certain costs from general and administrative expenses, (iii) an increase in brine disposal costs associated with our NGL storage caverns, (iv) higher gas and power costs and (v) increased costs associated with the cancellation of certain capital projects. The effect of these increases was reduced by a \$9 million favorable impact of foreign exchange.

General and Administrative Expenses. The increase in general and administrative expenses (excluding equity-indexed compensation expenses) for the year ended December 31, 2015 compared to the year ended December 31, 2014 was primarily due to increased salaries and benefits, partially offset by a \$3 million favorable foreign exchange impact.

General and administrative expenses (excluding equity-indexed compensation expenses) decreased during the year ended December 31, 2014 compared to the year ended December 31, 2013. These results reflect the net impact of a decrease due to a change in classification of \$8 million of certain costs to field operating costs during the 2014 period, partially offset by increased expenses resulting from overall growth in the segment.

Maintenance Capital. The increase in maintenance capital in 2015 over 2014 was primarily due to various tank and facility projects and timing of equipment replacements, as well as the impact from a change in classification of certain maintenance capital costs to our Transportation segment in the 2014 period. The increase in maintenance capital in 2014 from 2013 is primarily due to the timing of maintenance projects for tanks and other facility assets, partially offset by a change in classification of certain maintenance capital costs to our Transportation segment in the 2014 period.

Supply and Logistics Segment

Our revenues from supply and logistics activities reflect the sale of gathered and bulk-purchased crude oil, as well as sales of NGL volumes purchased from suppliers and natural gas sales attributable to the activities performed by our natural gas storage commercial optimization group. Generally, our segment profit is impacted by (i) increases or decreases in our Supply and Logistics segment volumes (which consist of lease gathering crude oil purchase volumes, NGL sales volumes and waterborne cargos), (ii) demand for lease gathering services we provide producers and (iii) the overall volatility and strength or weakness of market conditions and the allocation of our assets among our various risk management strategies. In addition, the execution of our risk management strategies in conjunction with our assets can provide upside in certain markets. Although segment profit may be adversely affected during certain transitional periods as discussed further below, our crude oil and NGL supply, logistics and distribution operations are not directly affected by the absolute level of prices, but are affected by overall levels of supply and demand for crude oil and NGL and relative fluctuations in market-related indices.

The following tables set forth our operating results from our Supply and Logistics segment for the periods indicated:

Operating Results ^{(1) (2)} (in millions, except per barrel data)	Year Ended December 31,			Favorable/(Unfavorable) Variance			
				2015-2014		2014-2013	
	2015	2014	2013	\$	%	\$	%
Revenues	\$ 21,945	\$ 42,150	\$ 40,696	\$ (20,205)	(48)%	\$ 1,454	4%
Purchases and related costs ⁽³⁾	(21,018)	(40,752)	(39,315)	19,734	48%	(1,437)	(4)%
Field operating costs ⁽⁴⁾	(433)	(481)	(422)	48	10%	(59)	(14)%
Equity-indexed compensation expense - operations	—	(2)	(3)	2	100%	1	33%
Segment general and administrative expenses ^{(4) (5)}	(102)	(105)	(102)	3	3%	(3)	(3)%
Equity-indexed compensation expense - general and administrative	(11)	(28)	(32)	17	61%	4	13%
Segment profit	\$ 381	\$ 782	\$ 822	\$ (401)	(51)%	\$ (40)	(5)%
Maintenance capital	\$ 8	\$ 7	\$ 15	\$ (1)	(14)%	\$ 8	53%
Segment profit per barrel	\$ 0.89	\$ 1.85	\$ 2.09	\$ (0.96)	(52)%	\$ (0.24)	(11)%

Average Daily Volumes (in thousands of barrels per day)	Year Ended December 31,			Favorable (Unfavorable) Variance			
				2015-2014		2014-2013	
	2015	2014	2013	Volume	%	Volume	%
Crude oil lease gathering purchases	943	949	859	(6)	(1)%	90	10%
NGL sales	223	208	215	15	7%	(7)	(3)%
Waterborne cargos	2	—	4	2	N/A	(4)	(100)%
Supply and Logistics segment total volumes	1,168	1,157	1,078	11	1%	79	7%

(1) Revenues and costs include intersegment amounts.

(2) Prior to January 1, 2014, natural gas sales and costs attributable to the activities performed by our natural gas storage commercial optimization group were reported in our Facilities segment.

(3) Purchases and related costs include interest expense (related to hedged inventory purchases) of \$6 million, \$12 million and \$30 million for the years ended December 31, 2015, 2014 and 2013, respectively.

(4) Field operating costs and Segment general and administrative expenses exclude equity-indexed compensation expense, which is presented separately in the table above.

(5) Segment general and administrative expenses reflect direct costs attributable to each segment and an allocation of other expenses to the segments. The proportional allocations by segment require judgment by management and are based on the business activities that exist during each period.

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The following table presents the range of the NYMEX West Texas Intermediate benchmark price of crude oil during the periods indicated:

During the Year Ended December 31,	NYMEX WTI Crude Oil Price	
	Low	High
2015	\$ 35	\$ 61
2014	\$ 53	\$ 107
2013	\$ 87	\$ 111

Because the commodities that we buy and sell are generally indexed to the same pricing indices for both sales and purchases, revenues and costs related to purchases will fluctuate with market prices. However, the margins related to those sales and purchases will not necessarily have a corresponding increase or decrease. The absolute amount of our revenues and purchases decreased for the year ended December 31, 2015 compared to the year ended December 31, 2014 due to lower crude oil and NGL prices during the 2015 period. The increase of the absolute amount of our revenues and purchases for the year ended December 31, 2014 over the year ended December 31, 2013 primarily resulted from higher crude oil volumes in the 2014 period, partially offset by lower crude oil prices relative to 2013, particularly in the fourth quarter.

Generally, we expect a base level of earnings from our Supply and Logistics segment from the assets employed by this segment. This base level may be optimized and enhanced when there is a high level of market volatility, favorable basis differentials and/or a steep contango or backwardated market structure. Also, our NGL marketing operations are sensitive to weather-related demand, particularly during the approximate five-month peak heating season of November through March, and temperature differences from period-to-period may have a significant effect on NGL demand and thus our financial performance.

The following is a discussion of items impacting Supply and Logistics segment profit and segment profit per barrel for the periods indicated.

Net Operating Revenues and Volumes. Our Supply and Logistics segment revenues, net of purchases and related costs, decreased by \$471 million for the year ended December 31, 2015 as compared to the 2014 period, of which \$389 million related to the mark-to-market impact of certain derivatives (see discussion and table below) and long-term inventory costing adjustments (see discussion below). For the 2014 period, segment revenues, net of purchases and related costs, increased by \$17 million over the comparable 2013 period. The following summarizes the more significant items impacting the comparative periods:

- **Crude Oil Operations** — Net revenues from our crude oil supply and logistics activities decreased for the year ended December 31, 2015 as compared to the year ended December 31, 2014 primarily due to (i) the compression of certain differentials during the 2015 period, which resulted in fewer opportunities to capture above-baseline margins as compared to 2014 and (ii) increased competition, largely due to overbuilt infrastructure in certain areas that has negatively impacted our lease gathering unit margins and volumes, most notably during the second half of 2015. However, such unfavorable results were partially offset by revenues from opportunities created by the contango market structure during 2015.

Net revenues from our crude oil supply and logistics activities increased slightly for 2014 as compared to 2013 primarily due to favorable impacts from the widening of certain differentials, most notably in the second and third quarters of 2014, that allowed for more opportunities to capture above-baseline margins as compared to 2013.

- **NGL Operations** — Net revenues from our NGL operations increased for the year ended December 31, 2015 compared to the year ended December 31, 2014. The increase was primarily driven by higher margins due to the lower cost of inventory carried over from 2014 year end and higher sales volumes.

Net revenues from our NGL marketing operations decreased for the year ended December 31, 2014 as compared to the year ended December 31, 2013. This decrease was driven by higher NGL purchases and related costs in the 2014 periods, primarily due to a higher weighted average inventory cost and increased facility fees. Additionally, NGL margins were further impacted by less favorable market conditions, most notably during (i) the second quarter of 2014, as market pricing was stronger in the comparable 2013 period due to heating requirements during a winter season that extended into the second quarter and greater petrochemical demand for propane and (ii) the fourth quarter of 2014, due to less demand for crop drying as compared to the 2013 period.

- **Natural Gas Storage Commercial Optimization** — During the first quarter of 2014, our natural gas storage commercial optimization activities were unfavorably impacted by costs incurred to manage deliverability requirements in conjunction with the extended period of severe cold weather experienced. We did not incur similar costs during 2015 or 2013.

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- Impact from Certain Derivative Activities, Net of Inventory Valuation Adjustments — The mark-to-market of certain of our derivative activities impacted our net revenues as shown in the table below for the periods indicated (in millions):

	Year Ended December 31,			Variance	
	2015	2014	2013	2015-2014	2014-2013
Gains/(losses) from certain derivative activities, net of inventory valuation adjustments ⁽¹⁾	\$ (114)	\$ 261	\$ (59)	\$ (375)	\$ 320

(1) Includes mark-to-market and other gains and losses resulting from certain derivative instruments that are related to underlying activities in another period (or the reversal of mark-to-market gains and losses from a prior period), gains and losses on certain derivatives that are related to investing activities (such as the purchase of linefill) and inventory valuation adjustments, as applicable. See Note 11 to our Consolidated Financial Statements for a comprehensive discussion regarding our derivatives and risk management activities.

- Long-Term Inventory Costing Adjustments — Our operating results are impacted by changes in the weighted average cost of our crude oil and NGL inventory pools that result from price movements during the periods. Such costing adjustments resulted in unfavorable impacts of \$99 million and \$85 million for the years ended December 31, 2015 and 2014, respectively, due to price decreases during each year. These costing adjustments related to long-term inventory necessary to meet our minimum inventory requirements in third-party assets and other working inventory that was needed for our commercial operations. We consider this inventory necessary to conduct our operations and we intend to carry this inventory for the foreseeable future.
- Foreign Exchange Impacts — Our results are impacted by fluctuations in the value of CAD to USD, resulting in foreign exchange gains and losses on U.S. denominated net assets within our Canadian operations. The impact of such gains and losses resulted in a favorable variance of \$38 million for 2015 compared to 2014 and an unfavorable variance of \$16 million for 2014 to 2013.

Furthermore, the depreciation of CAD relative to USD resulted in lower net USD costs of approximately \$41 million for 2015 compared to 2014 and by \$15 million for 2014 compared to 2013. Such costs are primarily associated with intercompany facility fees and are largely offset in our Facilities segment results.

Field Operating Costs. The decrease in field operating costs (excluding equity-indexed compensation expenses) for the year ended December 31, 2015 compared to the year ended December 31, 2014 was primarily due to the decreased use of third party trucking services as pipeline expansion projects were placed into service.

The increase in field operating costs (excluding equity-indexed compensation expenses) for the year ended December 31, 2014 over the year ended December 31, 2013 was primarily due to an increase in trucking costs associated with higher lease gathering volumes.

Maintenance Capital. The decrease in maintenance capital in 2014 compared to 2013 was primarily due to reduced spending on trucking assets.

Other Income and Expenses

Depreciation and Amortization

Depreciation and amortization expense increased during the 2015 period over the comparable 2014 period primarily due to various capital expansion projects completed during 2015, partially offset by favorable impacts from the depreciation of CAD relative to USD.

Depreciation and amortization expense increased during the 2014 period over the comparable 2013 period primarily due to various recently completed capital expansion projects, as well as an acceleration of depreciation on certain pipeline assets to reflect a change in their estimated useful lives. These increases were partially offset by a reduction in amortization expense due to declining-balance amortization used for certain of our intangible assets acquired in recent years.

Interest Expense

Interest expense is primarily impacted by:

- our weighted average debt balances;
- the level and maturity of fixed rate debt and interest rates associated therewith;
- market interest rates and our interest rate hedging activities on floating rate debt; and
- interest capitalized on capital projects and included in purchases and related costs.

The following table summarizes the components impacting the interest expense variance for the years ended December 31, 2015 and 2014 (in millions, except for percentages):

		Average LIBOR	Weighted Average Interest Rate ⁽¹⁾
Interest expense for the year ended December 31, 2013	\$ 319	0.2%	4.4%
Impact of issuance of PAA senior notes ^{(2) (5)}	51		
Impact of interest included in purchases and related costs ⁽³⁾	18		
Impact of retirement of PAA senior notes ⁽⁴⁾	(13)		
Impact of capitalized interest	(10)		
Other	(8)		
Interest expense for the year ended December 31, 2014	\$ 357	0.1%	4.3%
Impact of issuance of PAA senior notes ^{(5) (6)}	88		
Impact of interest included in purchases and related costs ⁽³⁾	6		
Impact of retirement of PAA senior notes ⁽⁷⁾	(9)		
Impact of capitalized interest	(9)		
Other	10		
Interest expense for the year ended December 31, 2015	\$ 443	0.2%	4.4%

(1) Excludes commitment and other fees.

(2) In August 2013, PAA completed the issuance of \$700 million of 3.85% senior notes due 2023.

(3) Interest costs attributable to borrowings for hedged inventory purchases are included in purchases and related costs in our Supply and Logistics segment profit as we consider interest on these borrowings a direct cost to storing the inventory. These costs were \$6 million, \$12 million and \$30 million for the years ended December 31, 2015, 2014 and 2013, respectively.

(4) In December 2013, PAA’s \$250 million, 5.63% senior notes matured.

(5) In April 2014, PAA completed the issuance of \$700 million of 4.70% senior notes due 2044; in September 2014, PAA completed the issuance of \$750 million of 3.60% senior notes due 2024; and in December 2014, PAA completed the issuance of \$500 million of 2.60% senior notes due 2019 and \$650 million of 4.90% senior notes due 2045.

(6) In August 2015, PAA completed the issuance of \$1.0 billion of 4.65% senior notes due 2025.

(7) PAA’s \$150 million, 5.25% senior notes and \$400 million, 3.95% senior notes matured in June 2015 and September 2015, respectively.

Other Income/(Expense), Net

Other income/(expense), net in each of the years ended December 31, 2015, 2014 and 2013 was primarily comprised of foreign currency gains or losses related to revaluations of CAD-denominated interest receivables associated with intercompany notes and the impact of related foreign currency hedges.

Income Tax Expense

Income tax expense decreased for the year ended December 31, 2015 compared to the year ended December 31, 2014 primarily due to the deferred income tax impact associated with fluctuations in the derivative mark-to-market valuation in our Canadian operations during the 2015 and 2014 periods. This benefit was partially offset by (i) higher deferred income tax expense associated with the amortization of our deferred tax asset, (ii) an Alberta, Canada provincial tax rate increase of 2% enacted during the second quarter of 2015 and (iii) higher current income tax expense resulting from increased year-over-year taxable earnings from our Canadian operations. The 2015 period was also favorably impacted by the depreciation of CAD relative to USD.

Income tax expense increased for the year ended December 31, 2014 compared to the year ended December 31, 2013 primarily as a result of the amortization of the deferred tax asset created in connection with our October 2013 IPO and November 2014 secondary offering, as well as higher deferred income tax expense associated with derivative mark-to-market gains in our Canadian operations. The increased deferred income tax expense was partially offset by lower current income tax expense as a result of decreased year-over-year taxable earnings from our Canadian operations.

Outlook

Primarily as a result of advances in drilling and completion techniques and their application to a number of large-scale shale and resource plays, which occurred contemporaneously with attractive crude oil and liquids prices, during the approximately three year period through the end of 2014, U.S. crude oil and liquids production in the lower 48 states increased rapidly. This was particularly true for light crudes and condensates. Similar resource development activities in Canada and ongoing oil sands development activities also led to increased Canadian crude oil production during this period. Additionally, during this period, the crude oil market experienced high levels of volatility in location and quality differentials as a result of the confluence of regional infrastructure constraints in North America, rapid and unexpected changes in crude oil qualities, international supply issues, and regional downstream operating issues. During 2013 and to a lesser degree 2014, these market conditions had a positive impact on our profitability as our business strategy and asset base positioned us to capitalize on opportunities created by the volatile environment.

However, the combination during such period of surging North American liquids production, relatively flat liquids production for the rest of the world and relatively modest growth in global liquids demand led to a supply imbalance, which in turn led to a significant and rapid reduction in petroleum prices. While we believe that our business model and asset base have minimal direct exposure to petroleum prices, our performance is influenced by certain differentials and overall North American production levels, which in turn are impacted by major price movements. The meaningful decrease in crude oil price levels during the second half of 2014 and throughout 2015 relative to the levels experienced during 2013 and the first half of 2014 have led many producers, including North American producers, to significantly scale back capital programs. As a result, during 2015, the rate of growth of North American crude oil production has slowed significantly and began to decrease in some areas as producers have taken rigs out of service and deferred completions at an increased rate. While we believe that the large North American resource base remains intact and will be developed, such production will likely take place at a slower pace and previously anticipated peak production levels will likely be reduced. The slowdown in North American production coupled with increases in infrastructure has led to a compression of basis differentials in a number of locations. This transitioning crude oil market presents challenges to our business model and asset base and will likely impact the rate of cash flow and distribution growth that we would have otherwise experienced over the next several years. In addition, increased competition and compressed differentials may drive lower volumes and lower unit margins in parts of our business, particularly our Supply and Logistics segment.

While we believe that these recent market developments will continue to slow down crude oil supply growth and contribute toward bringing the markets back to equilibrium, there can be no assurance that such equilibrium will be achieved or that we will not be negatively impacted by declining crude oil supply, low level of volatility or challenging capital markets conditions. Additionally, construction of additional infrastructure by us and our competitors will likely create excess takeaway capacity in certain areas at least for the near to medium term, which could further reduce unit margins in our various segments, and which may be exacerbated by declining levels of crude oil production. Finally, we cannot be certain that our expansion efforts will generate targeted returns or that any future acquisition activities will be successful. See Item 1A. “Risk Factors — Risks Related to PAA’s Business.”

Liquidity and Capital Resources

General

On a consolidated basis, our primary sources of liquidity are (i) cash flow from operating activities as further discussed below in the section entitled “—Cash Flow from Operating Activities,” (ii) borrowings under the credit facilities or the PAA commercial paper program and (iii) funds received from PAA’s sales of equity and debt securities. Our primary cash requirements include, but are not limited to, (i) ordinary course of business uses, such as the payment of amounts related to the purchase of crude oil, NGL and other products and other expenses and interest payments on outstanding debt, (ii) expansion and maintenance activities, (iii) acquisitions of assets or businesses, (iv) repayment of principal on long-term debt and (v) distributions to our Class A shareholders and noncontrolling interests. We generally expect to fund our short-term cash requirements through cash flow generated from operating activities and/or borrowings under the PAA commercial paper program or the credit facilities. In addition, we generally expect to fund our long-term needs, such as those resulting from expansion activities or acquisitions and refinancing long-term debt, through a variety of sources (either separately or in combination), which may include the sources mentioned above as funding for short-term needs and/or the issuance of additional PAA equity or debt securities. As of December 31, 2015, we had a working capital deficit of \$437 million and approximately \$2.4 billion of liquidity available to meet our ongoing operating, investing and financing needs, subject to continued covenant compliance, as noted below (in millions):

	As of December 31, 2015
Availability under PAA senior unsecured revolving credit facility ^{(1) (2)}	\$ 1,583
Availability under PAA senior secured hedged inventory facility ^{(1) (2)}	1,071
Availability under PAA senior unsecured 364-day revolving credit facility	1,000
Amounts outstanding under PAA commercial paper program	(1,368)
Subtotal	2,286
Availability under AAP senior secured revolving credit facility	116
Cash and cash equivalents	30
Total	\$ 2,432

- (1) Represents availability prior to giving effect to amounts outstanding under the PAA commercial paper program, which reduce available capacity under the facilities.

(2) Available capacity under the PAA senior unsecured revolving credit facility and the PAA senior secured hedged inventory facility was reduced by outstanding letters of credit of \$17 million and \$29 million, respectively.

During the latter part of 2015, energy industry conditions deteriorated and capital markets access for energy companies was disrupted, which has continued into 2016. To fund its ongoing capital program and maintain a solid capital structure and significant liquidity, in January 2016, PAA raised \$1.6 billion of equity capital through the sale of approximately 61.0 million unregistered Series A Convertible Preferred Units. See Note 10 to our Consolidated Financial Statements for additional information.

We believe that we have, and will continue to have, the ability to access the PAA commercial paper program and the credit facilities, which we use to meet our short-term cash needs. We believe that our financial position remains strong and we have sufficient liquidity; however, extended disruptions in the financial markets and/or energy price volatility that adversely affect our business may have a materially adverse effect on our financial condition, results of operations or cash flows. Also, see Item 1A. “Risk Factors” for further discussion regarding such risks that may impact our liquidity and capital resources. Usage of the PAA credit facilities, which provide the backstop for the PAA commercial paper program, and the AAP credit facility is subject to ongoing compliance with covenants. As of December 31, 2015, PAA and AAP were in compliance with all such covenants.

Cash Flow from Operating Activities

The primary drivers of cash flow from operating activities are (i) the collection of amounts related to the sale of crude oil, NGL and other products, the transportation of crude oil and other products for a fee, and storage and terminalling services provided for a fee and (ii) the payment of amounts related to the purchase of crude oil, NGL and other products and other expenses, principally field operating costs, general and administrative expenses and interest expense.

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Cash flow from operating activities can be materially impacted by the storage of crude oil in periods of a contango market, when the price of crude oil for future deliveries is higher than current prices. In the month we pay for the stored crude oil, we borrow under the credit facilities or the PAA commercial paper program (or use cash on hand) to pay for the crude oil, which negatively impacts operating cash flow. Conversely, cash flow from operating activities increases during the period in which we collect the cash from the sale of the stored crude oil. Similarly, the level of NGL and other product inventory stored and held for resale at period end affects our cash flow from operating activities.

In periods when the market is not in contango, we typically sell our crude oil during the same month in which we purchase it and we do not rely on borrowings under the credit facilities or the PAA commercial paper program to pay for the crude oil. During such market conditions, our accounts payable and accounts receivable generally move in tandem as we make payments and receive payments for the purchase and sale of crude oil in the same month, which is the month following such activity. In periods during which we build inventory, regardless of market structure, we may rely on the credit facilities or the PAA commercial paper program to pay for the inventory. In addition, we use derivative instruments to manage the risks associated with the purchase and sale of our commodities. Therefore, our cash flow from operating activities may be impacted by the margin deposit requirements related to our derivative activities and/or the timing of settlement of our derivative activities. For example, gains and losses from settled instruments that qualify as effective cash flow hedges are deferred in accumulated other comprehensive income/loss, but may impact operating cash flow in the period settled. See Note 11 to our Consolidated Financial Statements for a discussion regarding our derivatives and risk management activities.

Net cash provided by operating activities for the years ended December 31, 2015, 2014 and 2013 was approximately \$1.3 billion, \$2.0 billion and \$1.95 billion, respectively, and primarily resulted from earnings from our operations. Additionally, as discussed further below, changes in our inventory levels during these years impacted our cash flow from operating activities.

During 2015, we increased the amount of our inventory; however, these volumetric increases were largely offset by lower prices for our inventory stored at the end of the year compared to prior year amounts.

During 2014, we decreased the volume of our crude oil inventory that we held. The decreased inventory levels were further impacted by lower prices for such inventory stored at the end of the year compared to prior year amounts. In addition, our margin balances fluctuated from a net cash outflow to a net cash inflow. A portion of the net proceeds received from the liquidation of such inventory and the positive cash flow associated with our margin balance activities were used to repay borrowings under the PAA commercial paper program and favorably impacted cash flow from operating activities. These overall decreases were partially offset by an increase in the amount of NGL inventory stored at December 31, 2014 compared to prior year amounts, which was primarily financed through borrowings under the PAA commercial paper program.

During 2013, we decreased the amount of our inventory, primarily due to the sale of crude oil inventory that had been stored during the contango market, as well as the sale of NGL inventory due to end users' increased demand for product used for heating and crop drying during the latter half of 2013. The net proceeds received from liquidation of such inventory during the year were used to repay borrowings under the credit facilities or the PAA commercial paper program and favorably impacted cash flow from operating activities. These decreases in inventory were partially offset by an increase in natural gas inventory whereby we retained more capacity for our own use. We primarily used borrowings under the credit facilities to pay for the stored natural gas, which negatively impacted our cash flow from operating activities. Also, a significant portion of our 2013 natural gas sales occurred in December 2013, with cash collections on these sales occurring in January 2014.

Credit Agreements, PAA Commercial Paper Program and Indentures

At December 31, 2015, PAA had four primary credit arrangements. These include a \$1.6 billion senior unsecured revolving credit facility maturing in 2020, a \$1.4 billion senior secured hedged inventory facility maturing in 2018 and a \$1.0 billion, 364-day senior unsecured credit facility maturing in August 2016. Additionally, PAA has a \$3.0 billion unsecured commercial paper program that is backstopped by its revolving credit facility and its hedged inventory facility. The PAA credit agreements (which impact the ability to access the PAA commercial paper program because they provide the backstop that supports PAA's short-term credit ratings) and the indentures governing PAA's senior notes contain cross-default provisions. A default under PAA's credit agreements would permit the lenders to accelerate the maturity of the outstanding debt. As long as PAA is in compliance with the provisions in its credit agreements, PAA's ability to make distributions of available cash is not restricted. PAA was in compliance with the covenants contained in its credit agreements and indentures as of December 31, 2015. In addition, AAP has a credit agreement which includes a \$550 million term loan facility and a \$125 million senior secured revolving credit facility, both maturing in 2020. AAP was in compliance with the covenants contained in its credit agreement as of December 31, 2015.

Equity and Debt Financing Activities

On a consolidated basis, our financing activities primarily relate to funding expansion capital projects, acquisitions and refinancing of debt maturities, as well as short-term working capital and hedged inventory borrowings related to our NGL business and contango market activities. Our financing activities have primarily consisted of PAA equity offerings, PAA senior notes offerings and borrowings and repayments under the credit facilities or the PAA commercial paper program, as well as payment of distributions to our Class A shareholders and noncontrolling interests.

PAA Registration Statements. PAA periodically accesses the capital markets for both equity and debt financing. PAA has filed with the SEC a universal shelf registration statement that, subject to effectiveness at the time of use, allows PAA to issue up to an aggregate of \$2.0 billion of debt or equity securities (“Traditional Shelf”). All issuances of PAA equity securities associated with PAA’s continuous offering program have been issued pursuant to the Traditional Shelf. At December 31, 2015, PAA had approximately \$2.0 billion of unsold securities available under the Traditional Shelf. PAA also has access to a universal shelf registration statement (“WKSI Shelf”), which provides it with the ability to offer and sell an unlimited amount of debt and equity securities, subject to market conditions and capital needs. PAA’s March 2015 underwritten equity offering and PAA’s August 2015 senior notes issuance were conducted under the WKSI shelf. See “PAA Common Unit Issuances” and “PAA Senior Notes” below.

PAA Common Unit Issuances. The following table summarizes the issuance of PAA’s common units during the three years ended December 31, 2015 (net proceeds in millions):

Year	Type of Offering	Units Issued	Net Proceeds ⁽¹⁾
2015	Continuous Offering Program	1,133,904	\$ 58 ⁽²⁾
2015	Underwritten Offering	21,000,000	1,041 ⁽³⁾
2015 Total		22,133,904	\$ 1,099
2014 Total	Continuous Offering Program	15,375,810	\$ 848 ⁽²⁾
2013 Total	Continuous Offering Program	8,644,807	\$ 468 ⁽²⁾

- (1) Amounts are net of costs associated with the offerings.
- (2) PAA pays commissions to its sales agents in connection with common unit issuances under its Continuous Offering Program. PAA paid \$1 million, \$9 million and \$5 million of such commissions during 2015, 2014 and 2013, respectively. The net proceeds from these offerings were used for general partnership purposes.
- (3) A portion of the net proceeds from such offering was used to repay borrowings under the PAA commercial paper program and the remaining net proceeds were used for general partnership purposes, including expenditures for our 2015 capital program.

PAA Preferred Unit Issuance. In January 2016, PAA completed the private placement of approximately 61.0 million PAA preferred units at a price of \$26.25 per unit resulting in total net proceeds, after deducting offering expenses and the 2% transaction fee due to the purchasers, of approximately \$1.6 billion. We intend to use the net proceeds for capital expenditures, repayment of debt and general partnership purposes.

The PAA preferred units rank senior to all classes or series of equity securities in PAA with respect to distribution rights. The holders of the PAA preferred units are entitled to receive quarterly distributions, subject to customary anti-dilution adjustments, of \$0.525 per unit (\$2.10 per unit annualized), commencing with the quarter ending March 31, 2016. With respect to any quarter ending on or prior to December 31, 2017, PAA may elect to pay distributions on the PAA preferred units in additional preferred units, in cash or in a combination of both. AAP will be entitled to participate in distributions on the PAA preferred units equal to its 2% general partner interest in PAA.

After two years, the preferred units are convertible at the purchasers’ option into common units on a one-for-one basis, subject to certain conditions, and are convertible at PAA’s option in certain circumstances after three years.

Distribution of Net Proceeds from our IPO. In October 2013, we completed our IPO of 132,382,094 Class A shares representing limited partner interests at a price of \$22.00 per Class A share, generating net proceeds, after deducting underwriting discounts and commissions and direct offering expenses, of approximately \$2.8 billion. We distributed these net proceeds to certain owners of AAP who, prior to our IPO, sold a portion of their interests in AAP to us in exchange for the right to receive an amount equal to the net proceeds of the IPO.

PAA Senior Notes. During the last three years, PAA issued senior unsecured notes as summarized in the table below (in millions):

Year	Description	Maturity	Face Value	Gross Proceeds ⁽¹⁾	Net Proceeds ⁽²⁾
2015	4.65% Senior Notes issued at 99.846% of face value ⁽³⁾	October 2025	\$ 1,000	\$ 998	\$ 990
2014	2.60% Senior Notes issued at 99.813% of face value ⁽⁴⁾	December 2019	\$ 500	\$ 499	\$ 495
2014	4.90% Senior Notes issued at 99.876% of face value ⁽⁴⁾	February 2045	\$ 650	\$ 649	\$ 643
2014	3.60% Senior Notes issued at 99.842% of face value ⁽³⁾	November 2024	\$ 750	\$ 749	\$ 743
2014	4.70% Senior Notes issued at 99.734% of face value ⁽³⁾	June 2044	\$ 700	\$ 698	\$ 691
2013	3.85% Senior Notes issued at 99.792% of face value ⁽³⁾	October 2023	\$ 700	\$ 699	\$ 693

- (1) Face value of notes less the applicable premium or discount (before deducting for initial purchaser discounts, commissions and offering expenses).
- (2) Face value of notes less the applicable premium or discount, initial purchaser discounts, commissions and offering expenses.
- (3) The net proceeds from this offering were used to repay outstanding borrowings under the PAA credit facilities or the PAA commercial paper program and for general partnership purposes.
- (4) The net proceeds from this offering were used to repay outstanding borrowings under the PAA commercial paper program (a portion of which was used to fund the acquisition of a 50% interest in BridgeTex). See Note 7 to our Consolidated Financial Statements for further discussion.

PAA’s \$150 million, 5.25% senior notes and \$400 million, 3.95% senior notes matured in June 2015 and September 2015, respectively, and were repaid with borrowings under the PAA commercial paper program.

In December 2013, PAA’s \$250 million, 5.63% senior notes matured and were repaid with borrowings under the PAA commercial paper program.

Acquisitions, Capital Expenditures and Distributions Paid to Our Class A Shareholders and Noncontrolling Interests

In addition to our operating needs discussed above, on a consolidated basis, we also use cash for acquisition activities, capital projects and distributions paid to our Class A shareholders and noncontrolling interests. Historically, we have financed these expenditures primarily with cash generated by operations and the financing activities discussed above. See “—Acquisitions and Capital Projects” for further discussion of such capital expenditures.

Acquisitions and Divestitures. The price of acquisitions includes cash paid, assumed liabilities and net working capital items. Because of the non-cash items included in the total price of the acquisition and the timing of certain cash payments, the net cash paid may differ significantly from the total price of the acquisitions completed during the year. During the years ended December 31, 2015, 2014 and 2013, we paid cash of \$105 million, \$1,098 million and \$28 million, respectively, for acquisitions.

During the first quarter of 2016, we entered into binding agreements for the sale of various non-core assets for total consideration of approximately \$325 million. We expect these transactions to close in the first half of 2016.

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2016 Capital Projects. We expect the majority of funding for our 2016 capital program will be provided by the proceeds from PAA’s January 2016 preferred unit offering. Our capital program is highlighted by a large number of small-to-medium sized projects spread across multiple geographic regions/resource plays. We believe the diversity of our program mitigates the impact of delays, cost overruns or adverse market developments with respect to a particular project or geographic region/resource play. The majority of our 2016 expansion capital program will be invested in our fee-based Transportation and Facilities segments. We expect that our investments will have minimal contributions to our 2016 results, but will provide growth for 2017 and beyond. Our 2016 capital program includes the following projects as of February 2016 with the estimated cost for the entire year (in millions):

Projects	2016
Red River Pipeline (Cushing to Longview)	\$290
Diamond Pipeline	260
Fort Saskatchewan Facility Projects	190
Permian Basin Area Pipeline Projects	185
Saddlehorn Pipeline	155
Cushing Terminal Expansions	35
St. James Terminal Expansions	35
Caddo Pipeline	30
Cactus Pipeline	20
Eagle Ford JV Project	20
Other Projects	280
	\$1,500
Potential Adjustments for Timing / Scope Refinement ⁽¹⁾	-\$100 + \$100
Total Projected Expansion Capital Expenditures	\$1,400 - \$1,600
Maintenance Capital Expenditures	\$190 - \$210

⁽¹⁾ Potential variation to current capital costs estimates may result from (i) changes to project design, (ii) final cost of materials and labor and (iii) timing of incurrence of costs due to uncontrollable factors such as receipt of permits or regulatory approvals and weather.

Distributions to our Class A shareholders. We distribute 100% of our available cash within 55 days following the end of each quarter to Class A shareholders of record. Available cash is generally defined as all of our cash and cash equivalents on hand at the end of each quarter less reserves established in the discretion of our general partner for future requirements. On February 12, 2016, we paid a quarterly distribution of \$0.231 per Class A share. This distribution represents a year-over-year distribution increase of approximately 13.8%. See Note 10 to our Consolidated Financial Statements for details of distributions paid. Also, see Item 5. “Market for Registrant’s Shares, Related Shareholder Matters and Issuer Purchases of Equity Securities—Cash Distribution Policy” for additional discussion regarding distributions.

Distributions to noncontrolling interests. During the years ended December 31, 2015, 2014 and 2013, distributions of approximately \$1.5 billion, \$1.3 billion and \$1.5 billion, respectively, were paid to noncontrolling interests. These amounts represent distributions paid on interests in PAA, AAP and SLC Pipeline LLC that were not owned by us. Of the amount distributed during the year ended December 31, 2013, \$296 million related to distributions paid for the noncontrolling interests’ proportionate share of the net proceeds from the increase in AAP’s term loan. See Note 10 to our Consolidated Financial Statements for further discussion.

We believe that we have sufficient liquid assets, cash flow from operations and borrowing capacity under the credit agreements to meet our financial commitments, debt service obligations, contingencies and anticipated capital expenditures. We are, however, subject to business and operational risks that could adversely affect our cash flow. A prolonged material decrease in our cash flows would likely produce an adverse effect on our borrowing capacity.

Contingencies

For a discussion of contingencies that may impact us, see Note 16 to our Consolidated Financial Statements.

Commitments

Contractual Obligations. In the ordinary course of doing business, we purchase crude oil and NGL from third parties under contracts, the majority of which range in term from thirty-day evergreen to five years, with a limited number of contracts with remaining terms extending up to ten years. We establish a margin for these purchases by entering into various types of physical and financial sale and exchange transactions through which we seek to maintain a position that is substantially balanced between purchases on the one hand and sales and future delivery obligations on the other. In addition, we enter into similar contractual obligations in conjunction with our natural gas operations. The table below includes purchase obligations related to these activities. Where applicable, the amounts presented represent the net obligations associated with our counterparties (including giving effect to netting buy/sell contracts and those subject to a net settlement arrangement). We do not expect to use a significant amount of internal capital to meet these obligations, as the obligations will be funded by corresponding sales to entities that we deem creditworthy or who have provided credit support we consider adequate.

The following table includes our best estimate of the amount and timing of these payments as well as others due under the specified contractual obligations as of December 31, 2015 (in millions):

	2016	2017	2018	2019	2020	2021 and Thereafter	Total
Long-term debt, including current maturities and related interest payments ⁽¹⁾	\$ 1,335	\$ 858	\$ 1,031	\$ 1,247	\$ 1,400	\$ 11,040	\$ 16,911
Leases ⁽²⁾	200	184	154	128	108	427	1,201
Other obligations ⁽³⁾	680	364	145	149	146	581	2,065
Subtotal	2,215	1,406	1,330	1,524	1,654	12,048	20,177
Crude oil, natural gas, NGL and other purchases ⁽⁴⁾	3,837	2,142	1,592	1,127	914	2,694	12,306
Total	\$ 6,052	\$ 3,548	\$ 2,922	\$ 2,651	\$ 2,568	\$ 14,742	\$ 32,483

- ⁽¹⁾ Includes debt service payments, interest payments due on PAA’s senior notes, interest payments on long-term borrowings outstanding under the AAP credit agreement, the commitment fee on assumed available capacity under the PAA credit facilities and long-term borrowings under the PAA commercial paper program. Although there may be short-term borrowings under the PAA credit facilities and the PAA commercial paper program, we historically repay and borrow at varying amounts. As such, we have included only the maximum commitment fee (as if no short-term borrowings were outstanding on the PAA credit facilities or the PAA commercial paper program) in the amounts above. For additional information regarding our debt obligations, see Note 9 to our Consolidated Financial Statements.
- ⁽²⁾ Leases are primarily for (i) surface rentals, (ii) office rent, (iii) pipeline assets and (iv) trucks, trailers and railcars. Includes both capital and operating leases as defined by FASB guidance.
- ⁽³⁾ Includes (i) other long-term liabilities (excluding approximately \$33 million related to derivative activity included in Crude oil, natural gas, NGL and other purchases), (ii) storage, processing and transportation agreements and (iii) non-cancelable commitments related to our capital expansion projects, including projected contributions for our share of the capital spending of our equity method investments. The transportation agreements include approximately \$930 million associated with an agreement to transport crude oil on a pipeline that is owned by an equity method investee, in which we own a 50% interest. Our commitment to transport is supported by crude oil buy/sell agreements with third parties (including Oxy) with commensurate quantities.
- ⁽⁴⁾ Amounts are primarily based on estimated volumes and market prices based on average activity during December 2015. The actual physical volume purchased and actual settlement prices will vary from the assumptions used in the table. Uncertainties involved in these estimates include levels of production at the wellhead, weather conditions, changes in market prices and other conditions beyond our control.

Letters of Credit. In connection with supply and logistics activities, we provide certain suppliers with irrevocable standby letters of credit to secure our obligation for the purchase of crude oil, NGL and natural gas. Our liabilities with respect to these purchase obligations are recorded in accounts payable on our balance sheet in the month the product is purchased. Generally, these letters of credit are issued for periods of up to seventy days and are terminated upon completion of each transaction. Additionally, we issue letters of credit to support insurance programs, derivative transactions and construction activities. At December 31, 2015 and 2014, we had outstanding letters of credit of approximately \$46 million and \$87 million, respectively.

Off-Balance Sheet Arrangements

We have no off-balance sheet arrangements as defined by Item 303 of Regulation S-K.

Investments in Unconsolidated Entities

We have invested in entities that are not consolidated in our financial statements. Certain of these entities are borrowers under credit facilities. We are neither a co-borrower nor a guarantor under any such facilities. We may elect at any time to make additional capital contributions to any of these entities. The following table sets forth selected information regarding these entities as of December 31, 2015 (unaudited, dollars in millions):

Entity	Type of Operation	Our Ownership Interest	Total Entity Assets	Total Cash and Restricted Cash	Total Entity Debt
Settoon Towing, LLC	Barge Transportation Services	50%	\$ 337	\$ —	\$ 226
BridgeTex Pipeline Company, LLC	Crude Oil Pipeline	50%	\$ 857	\$ 26	\$ —
Caddo Pipeline LLC	Crude Oil Pipeline	50%	\$ 54	\$ 2	\$ —
Diamond Pipeline LLC	Crude Oil Pipeline	50%	\$ 178	\$ 100	\$ —
Eagle Ford Terminals Corpus Christi LLC	Crude Oil Terminal and Dock	50%	\$ 62	\$ 4	\$ —
Eagle Ford Pipeline LLC	Crude Oil Pipeline	50%	\$ 768	\$ 14	\$ —
Frontier Pipeline Company	Crude Oil Pipeline	50%	\$ 26	\$ 4	\$ —
Saddlehorn Pipeline Company, LLC	Crude Oil Pipeline	40%	\$ 365	\$ 51	\$ —
White Cliffs Pipeline, LLC	Crude Oil Pipeline	36%	\$ 592	\$ 24	\$ —
Butte Pipe Line Company	Crude Oil Pipeline	22%	\$ 28	\$ 3	\$ —

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to various market risks, including (i) commodity price risk, (ii) interest rate risk and (iii) currency exchange rate risk. We use various derivative instruments to manage such risks and, in certain circumstances, to realize incremental margin during volatile market conditions. Our risk management policies and procedures are designed to help ensure that our hedging activities address our risks by monitoring our exchange-cleared and over-the-counter positions, as well as physical volumes, grades, locations, delivery schedules and storage capacity. We have a risk management function that has direct responsibility and authority for our risk policies, related controls around commercial activities and certain aspects of corporate risk management. Our risk management function also approves all new risk management strategies through a formal process. The following discussion addresses each category of risk.

Commodity Price Risk

We use derivative instruments to hedge price risk associated with the following commodities:

- Crude oil

We utilize crude oil derivatives to hedge commodity price risk inherent in our Supply and Logistics and Transportation segments. Our objectives for these derivatives include hedging anticipated purchases and sales, stored inventory, and storage capacity utilization. We manage these exposures with various instruments including exchange-traded and over-the-counter futures, forwards, swaps and options.
- Natural gas

We utilize natural gas derivatives to hedge commodity price risk inherent in our Supply and Logistics and Facilities segments. Our objectives for these derivatives include hedging anticipated purchases and sales and managing our anticipated base gas requirements. We manage these exposures with various instruments including exchange-traded futures, swaps and options.
- NGL and other

We utilize NGL derivatives, primarily butane and propane derivatives, to hedge commodity price risk inherent in our Supply and Logistics segment. Our objectives for these derivatives include hedging anticipated purchases and sales and stored inventory. We manage these exposures with various instruments including exchange-traded and over-the-counter futures, forwards, swaps and options.

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See Note 11 to our Consolidated Financial Statements for further discussion regarding our hedging strategies and objectives.

The fair value of our commodity derivatives and the change in fair value as of December 31, 2015 that would be expected from a 10% price increase or decrease is shown in the table below (in millions):

	Fair Value	Effect of 10% Price Increase	Effect of 10% Price Decrease
Crude oil	\$ 128	\$ (56)	\$ 56
Natural gas	4	(4)	4
NGL and other	95	(20)	20
Total fair value	<u>\$ 227</u>		

The fair values presented in the table above reflect the sensitivity of the derivative instruments only and do not include the effect of the underlying hedged commodity. Price-risk sensitivities were calculated by assuming an across-the-board 10% increase or decrease in price regardless of term or historical relationships between the contractual price of the instruments and the underlying commodity price. In the event of an actual 10% change in near-term commodity prices, the fair value of our derivative portfolio would typically change less than that shown in the table as changes in near-term prices are not typically mirrored in delivery months further out.

Interest Rate Risk

Our use of variable rate debt and any forecasted issuances of fixed rate debt expose us to interest rate risk. Therefore, from time to time we use interest rate derivatives to hedge interest rate risk associated with anticipated interest payments and, in certain cases, outstanding debt instruments. All of PAA’s senior notes are fixed rate notes and thus are not subject to interest rate risk. Our variable rate debt outstanding at December 31, 2015, approximately \$2.2 billion, is subject to interest rate re-sets that range from less than one week to two months. The average interest rate on variable rate debt that was outstanding during the year ended December 31, 2015 was 1.1%, based upon rates in effect during the year. The fair value of our interest rate derivatives was a liability of \$49 million as of December 31, 2015. A 10% increase in the forward LIBOR curve as of December 31, 2015 would have resulted in an increase of \$47 million to the fair value of our interest rate derivatives. A 10% decrease in the forward LIBOR curve as of December 31, 2015 would have resulted in a decrease of \$47 million to the fair value of our interest rate derivatives. See Note 11 to our Consolidated Financial Statements for a discussion of our interest rate risk hedging activities.

Currency Exchange Rate Risk

We use foreign currency derivatives to hedge foreign currency exchange rate risk associated with our exposure to fluctuations in the USD-to-CAD exchange rate. Because a significant portion of our Canadian business is conducted in CAD and, at times, a portion of our debt is denominated in CAD, we use certain financial instruments to minimize the risks of unfavorable changes in exchange rates. These instruments include foreign currency exchange contracts, forwards and options. The fair value of our foreign currency derivatives was a liability of \$8 million as of December 31, 2015. A 10% increase in the exchange rate (USD-to-CAD) would have resulted in a decrease of \$19 million to the fair value of our foreign currency derivatives. A 10% decrease in the exchange rate (USD-to-CAD) would have resulted in an increase of \$19 million to the fair value of our foreign currency derivatives. See Note 11 to our Consolidated Financial Statements for a discussion of our currency exchange rate risk hedging.

Item 8. Financial Statements and Supplementary Data

See “Index to the Consolidated Financial Statements” on page F-1.

Item 9. Changes In and Disagreements With Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Disclosure Controls and Procedures

We maintain written disclosure controls and procedures, which we refer to as our “DCP.” Our DCP is designed to ensure that information required to be disclosed by us in reports that we file under the Securities Exchange Act of 1934 (the “Exchange Act”) is (i) recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms, and (ii) accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer, to allow for timely decisions regarding required disclosure.

Applicable SEC rules require an evaluation of the effectiveness of our DCP. Management, under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our DCP as of December 31, 2015, the end of the period covered by this report, and, based on such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our DCP is effective.

Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting. “Internal control over financial reporting” is a process designed by, or under the supervision of, our Chief Executive Officer and our Chief Financial Officer, and effected by our Board of Directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP. Our management, including our Chief Executive Officer and our Chief Financial Officer, has evaluated the effectiveness of our internal control over financial reporting as of December 31, 2015. See Management’s Report on Internal Control Over Financial Reporting on page F-2 of our Consolidated Financial Statements.

Our independent registered public accounting firm, PricewaterhouseCoopers LLP, assessed the effectiveness of our internal control over financial reporting, as stated in the firm’s report. See “Report of Independent Registered Public Accounting Firm” on page F-3 of our Consolidated Financial Statements.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting during the fourth quarter of 2015 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Certifications

The certifications of our Chief Executive Officer and Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a) are filed with this report as Exhibits 31.1 and 31.2. The certifications of our Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. 1350 are furnished with this report as Exhibits 32.1 and 32.2.

Item 9B. Other Information

There was no information that was required to be disclosed in a report on Form 8-K during the fourth quarter of 2015 that has not previously been reported.