UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

☑ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended June 30, 2019

or

□ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission File Number: 1-36132

PLAINS GP HOLDINGS, L.P.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

90-1005472

(I.R.S. Employer Identification No.)

333 Clay Street, Suite 1600

Houston, Texas 77002

(Address of principal executive offices) (Zip code) (713) 646-4100

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Class A Shares	PAGP	New York Stock Exchange

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. 🖾 Yes 🗌 No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). 🖾 Yes 🗌 No

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

 Large accelerated filer I
 Accelerated filer I

 Non-accelerated filer I
 Smaller reporting company I

 Emerging growth company I

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).
□ Yes ☑ No

As of July 31, 2019, there were 166,989,575 Class A Shares outstanding.

PLAINS GP HOLDINGS, L.P. AND SUBSIDIARIES TABLE OF CONTENTS

	Page
PART I. FINANCIAL INFORMATION	
Item 1. UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS:	
Condensed Consolidated Balance Sheets: As of June 30, 2019 and December 31, 2018	<u>3</u>
Condensed Consolidated Statements of Operations: For the three and six months ended June 30, 2019 and 2018	<u>4</u>
Condensed Consolidated Statements of Comprehensive Income: For the three and six months ended June 30, 2019 and 2018	<u>5</u>
Condensed Consolidated Statements of Changes in Accumulated Other Comprehensive Income/(Loss): For the six months ended June 30, 2019 and 2018	<u>5</u>
Condensed Consolidated Statements of Cash Flows: For the six months ended June 30, 2019 and 2018	<u>6</u>
Condensed Consolidated Statements of Changes in Partners' Capital: For the three and six months ended June 30, 2019 and 2018	<u>Z</u>
Notes to the Condensed Consolidated Financial Statements:	
1. Organization and Basis of Consolidation and Presentation	<u>9</u>
2. Summary of Significant Accounting Policies	<u>11</u>
3. Revenues and Accounts Receivable	<u>13</u>
4. Net Income Per Class A Share	<u>16</u>
5. Inventory, Linefill and Base Gas and Long-term Inventory	<u>18</u>
<u>6. Goodwill</u>	<u>18</u>
7. Investments in Unconsolidated Entities	<u>19</u>
8. Debt	<u>21</u>
9. Partners' Capital and Distributions	<u>22</u>
10. Derivatives and Risk Management Activities	<u>24</u>
<u>11. Leases</u>	<u>31</u>
12. Related Party Transactions	<u>34</u>
13. Commitments and Contingencies	<u>35</u>
<u>14. Operating Segments</u>	<u>40</u>
<u>15. Income Taxes</u>	<u>43</u>
Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS	<u>44</u>
Item 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK	<u>67</u>
Item 4. CONTROLS AND PROCEDURES	<u>69</u>
PART II. OTHER INFORMATION	
Item 1. LEGAL PROCEEDINGS	70
Item 1A. RISK FACTORS	70
Item 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS	<u>70</u>
Item 3. DEFAULTS UPON SENIOR SECURITIES	<u></u> <u>70</u>
Item 4. MINE SAFETY DISCLOSURES	<u></u> <u>70</u>
Item 5. OTHER INFORMATION	<u></u> <u>70</u>
Item 6. EXHIBITS	<u></u> <u>71</u>
SIGNATURES	<u>74</u>

PART I. FINANCIAL INFORMATION

Item 1. UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

PLAINS GP HOLDINGS, L.P. AND SUBSIDIARIES CONDENSED CONSOLIDATED BALANCE SHEETS (in millions, except share data)

		June 30, 2019	December 31, 2018		
1.00F770		(unau	idited)		
ASSETS					
CURRENT ASSETS					
Cash and cash equivalents	\$	428	\$	69	
Restricted cash		42		_	
Trade accounts receivable and other receivables, net		2,835		2,454	
Inventory		558		640	
Other current assets		428		373	
Total current assets		4,291		3,536	
PROPERTY AND EQUIPMENT		18,497		17,905	
Accumulated depreciation		(3,343)		(3,103	
Property and equipment, net		15,154		14,802	
OTHER ASSETS		0.505		0.504	
Goodwill Investments in unconsolidated entities		2,537		2,521	
		3,377		2,702	
Deferred tax asset		1,256		1,304	
Linefill and base gas		922		916	
Long-term operating lease right-of-use assets, net		469		100	
Long-term inventory		152		136	
Other long-term assets, net Total assets	<u></u>	875	đ	913	
TOTAL ASSets	\$	29,033	\$	26,830	
LIABILITIES AND PARTNERS' CAPITAL					
CURRENT LIABILITIES					
Trade accounts payable	\$	3,049	\$	2,705	
Short-term debt		470		66	
Other current liabilities		782		687	
Total current liabilities		4,301		3,458	
LONG-TERM LIABILITIES					
Senior notes, net		8,945		8,941	
Other long-term debt, net		231		202	
Long-term operating lease liabilities		370		_	
Other long-term liabilities and deferred credits		844		910	
Total long-term liabilities		10,390		10,053	
COMMITMENTS AND CONTINGENCIES (NOTE 13)					
PARTNERS' CAPITAL					
Class A shareholders (166,817,333 and 159,485,588 shares outstanding, respectively)		2,036		1,846	
Noncontrolling interests		12,306		11,473	
		12,500			
Total partners' capital		14,342		13,319	

PLAINS GP HOLDINGS, L.P. AND SUBSIDIARIES CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS (in millions, except per share data)

		Three Mo Jun	nths Ei e 30,	nded		Six Mon Jun	ths Er e 30,	ıded
		2019		2018		2019		2018
		(unat	ıdited)			(unat		
REVENUES			-					
Supply and Logistics segment revenues	\$	7,914	\$	7,781	\$	15,936	\$	15,892
Transportation segment revenues		188		152		385		298
Facilities segment revenues		151		147		307		288
Total revenues		8,253		8,080		16,628		16,478
COSTS AND EXPENSES								
Purchases and related costs		7,244		7,551		14,362		15,070
Field operating costs		340		312		667		605
General and administrative expenses		76		81		154		161
Depreciation and amortization		148		131		284		257
(Gains)/losses on asset sales and asset impairments, net		(4)		(81)		_		(81)
Total costs and expenses		7,804		7,994		15,467		16,012
OPERATING INCOME		449		86		1,161		466
OTHER INCOME/(EXPENSE)								
Equity earnings in unconsolidated entities		83		96		172		171
Gain on investment in unconsolidated entities (Note 7)		_		_		267		_
Interest expense (net of capitalized interest of \$11, \$7, \$22 and \$13, respectively)		(103)		(111)		(203)		(217)
Other income/(expense), net		(6)		11		18		10
INCOME BEFORE TAX		423		82		1,415		430
Current income tax expense		(24)		(7)		(53)		(20)
Deferred income tax (expense)/benefit		27		21		(22)		(41)
NET INCOME		426		96		1,340		369
Net income attributable to noncontrolling interests		(360)		(89)		(1,127)		(325)
NET INCOME ATTRIBUTABLE TO PAGP	\$	66	\$	7	\$	213	\$	44
DASIC NET INCOME DED OF ASS A SHADE	\$	0.41	\$	0.05	¢	1.32	¢	0.28
BASIC NET INCOME PER CLASS A SHARE	ð	0.41	5	0.03	\$	1.32	\$	0.20
DILUTED NET INCOME PER CLASS A SHARE	\$	0.40	\$	0.05	\$	1.32	\$	0.28
BASIC WEIGHTED AVERAGE CLASS A SHARES OUTSTANDING		162		157		161		157
DILUTED WEIGHTED AVERAGE CLASS A SHARES OUTSTANDING		164		157		161		157

PLAINS GP HOLDINGS, L.P. AND SUBSIDIARIES CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (in millions)

	 Three Mo Jun	d	Six Months Ended June 30,				
	 2019				2019	2019	
	(unaudited)				(unat	idited)	
Net income	\$ 426	\$	96	\$	1,340	\$	369
Other comprehensive income/(loss)	51		(56)		109		(121)
Comprehensive income	 477		40		1,449		248
Comprehensive income attributable to noncontrolling interests	(399)		(45)		(1,211)		(230)
Comprehensive income/(loss) attributable to PAGP	\$ 78	\$	(5)	\$	238	\$	18

The accompanying notes are an integral part of these condensed consolidated financial statements.

PLAINS GP HOLDINGS, L.P. AND SUBSIDIARIES CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN ACCUMULATED OTHER COMPREHENSIVE INCOME/(LOSS) (in millions)

	 Derivative Instruments	Translation Adjustments	Other			Total
		(unauc	lited)			
Balance at December 31, 2018	\$ (177)	\$ (853)	\$	—	\$	(1,030)
Reclassification adjustments	5					5
Unrealized loss on hedges	(58)	—		—		(58)
Currency translation adjustments	—	161				161
Other	—	—		1		1
Total period activity	 (53)	 161		1		109
Balance at June 30, 2019	\$ (230)	\$ (692)	\$	1	\$	(921)

	Derivative Instruments	Translation Adjustments	Other			Total
		(unaud	lited)			
Balance at December 31, 2017	\$ (223)	\$ (548)	\$	1	\$	(770)
Reclassification adjustments	5	_		_		5
Unrealized gain on hedges	45	—		—		45
Currency translation adjustments	—	(171)		—		(171)
Total period activity	50	 (171)		_		(121)
Balance at June 30, 2018	\$ (173)	\$ (719)	\$	1	\$	(891)

PLAINS GP HOLDINGS, L.P. AND SUBSIDIARIES CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (in millions)

	Six Months Ended June 30,				
		2019	2018	8	
		(unau	dited)		
CASH FLOWS FROM OPERATING ACTIVITIES	.		^	2.22	
Net income	\$	1,340	\$	369	
Reconciliation of net income to net cash provided by operating activities:					
Depreciation and amortization		284		257	
(Gains)/losses on asset sales and asset impairments, net				(81)	
Equity-indexed compensation expense		24		36	
Deferred income tax expense		22		41	
Settlement of terminated interest rate hedging instruments		(22)		14	
Equity earnings in unconsolidated entities		(172)		(171)	
Distributions on earnings from unconsolidated entities		200		206	
Gain on investment in unconsolidated entities (Note 7)		(267)		—	
Other		8		13	
Changes in assets and liabilities, net of acquisitions		51		329	
Net cash provided by operating activities		1,468		1,013	
CASH FLOWS FROM INVESTING ACTIVITIES					
Cash paid in connection with acquisitions, net of cash acquired		(47)			
Investments in unconsolidated entities		(259)		(216)	
Additions to property, equipment and other		(642)		(724)	
Proceeds from sales of assets		2		426	
Cash paid for purchases of linefill and base gas		(24)			
Other investing activities		(8)		8	
Net cash used in investing activities		(978)		(506)	
				<u> </u>	
CASH FLOWS FROM FINANCING ACTIVITIES					
Net borrowings under PAA commercial paper program (Note 8)		218		135	
Net borrowings under PAA senior unsecured revolving credit facility (Note 8)		—		126	
Net borrowings/(repayments) under PAA senior secured hedged inventory facility (Note 8)		100		(333)	
Distributions paid to Class A shareholders (Note 9)		(105)		(94)	
Distributions paid to noncontrolling interests (Note 9)		(474)		(403)	
Sale of noncontrolling interest in a subsidiary (Note 9)		128		—	
Other financing activities		47		62	
Net cash used in financing activities		(86)		(507)	
Effect of translation adjustment		(3)		(3)	
Net increase/(decrease) in cash and cash equivalents and restricted cash		401		(3)	
Cash and cash equivalents and restricted cash, beginning of period		69		40	
Cash and cash equivalents and restricted cash, end of period	\$	470	\$	37	
Cash paid for:					
Interest, net of amounts capitalized	\$	188	\$	203	
Income taxes, net of amounts refunded	\$	86	\$	11	

PLAINS GP HOLDINGS, L.P. AND SUBSIDIARIES CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN PARTNERS' CAPITAL (in millions)

	Class A Shareholders			Noncontrolling Interests		Total Partners' Capital
				(unaudited)		
Balance at December 31, 2018	\$	1,846	\$	11,473	\$	13,319
Net income		213		1,127		1,340
Distributions (Note 9)		(105)		(474)		(579)
Deferred tax asset		27		—		27
Other comprehensive income		25		84		109
Change in ownership interest in connection with Exchange Right exercises (Note 9)		31		(31)		_
Equity-indexed compensation expense		2		6		8
Sale of noncontrolling interest in a subsidiary (Note 9)		—		128		128
Other		(3)		(7)		(10)
Balance at June 30, 2019	\$	2,036	\$	12,306	\$	14,342

	Class A Shareholders			Noncontrolling Interests		Total artners' Capital
				(unaudited)		
Balance at March 31, 2019	\$	1,955	\$	12,067	\$	14,022
Net income		66		360		426
Distributions (Note 9)		(57)		(254)		(311)
Deferred tax asset		30				30
Other comprehensive income		12		39		51
Change in ownership interest in connection with Exchange Right exercises (Note 9)		31		(31)		—
Equity-indexed compensation expense		1		3		4
Sale of noncontrolling interest in a subsidiary (Note 9)		_		128		128
Other		(2)		(6)		(8)
Balance at June 30, 2019	\$	2,036	\$	12,306	\$	14,342

The accompanying notes are an integral part of these condensed consolidated financial statements.

PLAINS GP HOLDINGS, L.P. AND SUBSIDIARIES CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN PARTNERS' CAPITAL (continued) (in millions)

	Class A Shareholders	Noncontrolling Interests			Total Partners' Capital
			(unaudited)		
Balance at December 31, 2017	\$ 1,695	\$	10,663	\$	12,358
Impact of adoption of ASU 2017-05	 24		89		113
Balance at January 1, 2018	 1,719		10,752		12,471
Net income	44		325		369
Distributions	(94)		(440)		(534)
Deferred tax asset	8				8
Other comprehensive loss	(26)		(95)		(121)
Change in ownership interest in connection with Exchange Right exercises	3		(3)		
Equity-indexed compensation expense	4		19		23
Other	3		(4)		(1)
Balance at June 30, 2018	\$ 1,661	\$	10,554	\$	12,215

	S	Class A hareholders	Noncontrolling Interests		Par	Total tners' Capital
			(unaudited)		
Balance at March 31, 2018	\$	1,701	\$	10,723	\$	12,424
Net income		7	-	89		96
Distributions		(47)		(220)		(267)
Deferred tax asset		6		—		6
Other comprehensive loss		(12)		(44)		(56)
Change in ownership interest in connection with Exchange Right exercises		2		(2)		_
Equity-indexed compensation expense		2		10		12
Other		2		(2)		_
Balance at June 30, 2018	\$	1,661	\$	10,554	\$	12,215

The accompanying notes are an integral part of these condensed consolidated financial statements.

Note 1—Organization and Basis of Consolidation and Presentation

Organization

Plains GP Holdings, L.P. ("PAGP") is a Delaware limited partnership formed in July 2013 that has elected to be taxed as a corporation for United States federal income tax purposes. PAGP does not directly own any operating assets; as of June 30, 2019, its principal sources of cash flow are derived from an indirect investment in Plains All American Pipeline, L.P. ("PAA"), a publicly traded Delaware limited partnership. As used in this Form 10-Q and unless the context indicates otherwise (taking into account the fact that PAGP has no operating activities apart from those conducted by PAA and its subsidiaries), the terms "Partnership," "we," "us," "our," "ours" and similar terms refer to PAGP and its subsidiaries.

As of June 30, 2019, PAGP owned (i) a 100% managing member interest in Plains All American GP LLC ("GP LLC"), an entity that has also elected to be taxed as a corporation for United States federal income tax purposes and (ii) an approximate 63% limited partner interest in Plains AAP, L.P. ("AAP") through our direct ownership of approximately 165.8 million Class A units of AAP ("AAP units") and indirect ownership of approximately 1.0 million AAP units through GP LLC. GP LLC is a Delaware limited liability company that also holds the non-economic general partner interest in AAP. AAP is a Delaware limited partnership that, as of June 30, 2019, directly owned a limited partner interest in PAA through its ownership of approximately 268.5 million PAA common units (approximately 34% of PAA's total outstanding common units and Series A preferred units combined). AAP is the sole member of PAA GP LLC ("PAA GP"), a Delaware limited liability company that directly holds the non-economic general partner interest in PAA.

PAA is a publicly traded master limited partnership that owns and operates midstream energy infrastructure and provides logistics services primarily for crude oil, natural gas liquids ("NGL") and natural gas. 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. Our business activities are conducted through three operating segments: Transportation, Facilities and Supply and Logistics. See Note 14 for further discussion of our operating segments.

PAA GP Holdings LLC, a Delaware limited liability company, is our general partner. Our general partner manages our operations and activities and is responsible for exercising on our behalf any rights we have as the sole and managing member of GP LLC, including responsibility for conducting the business and managing the operations of AAP and PAA. GP LLC employs our domestic officers and personnel involved in the operation and management of AAP and PAA. PAA's Canadian officers and personnel are employed by our subsidiary, Plains Midstream Canada ULC.

Definitions

Additional defined terms are used in this Form 10-Q and shall have the meanings indicated below:

AOCI	=	Accumulated other comprehensive income/(loss)
ASC	=	Accounting Standards Codification
ASU	=	Accounting Standards Update
Bcf	=	Billion cubic feet
Btu	=	British thermal unit
CAD	=	Canadian dollar
CODM	=	Chief Operating Decision Maker
EBITDA	=	Earnings before interest, taxes, depreciation and amortization
EPA	=	United States Environmental Protection Agency
FASB	=	Financial Accounting Standards Board
GAAP	=	Generally accepted accounting principles in the United States
ICE	=	Intercontinental Exchange
ISDA	=	International Swaps and Derivatives Association
LIBOR	=	London Interbank Offered Rate
LTIP	=	Long-term incentive plan
Mcf	=	Thousand cubic feet
NGL	=	Natural gas liquids, including ethane, propane and butane
NYMEX	=	New York Mercantile Exchange
Oxy	=	Occidental Petroleum Corporation or its subsidiaries
PLA	=	Pipeline loss allowance
SEC	=	United States Securities and Exchange Commission
TWh	=	Terawatt hour
USD	=	United States dollar
WTI	=	West Texas Intermediate

Basis of Consolidation and Presentation

The accompanying unaudited condensed consolidated interim financial statements and related notes thereto should be read in conjunction with our 2018 Annual Report on Form 10-K. The accompanying condensed consolidated financial statements include the accounts of PAGP and all of its wholly owned subsidiaries and those entities that it controls. Investments in entities over which we have significant influence but not control are accounted for by the equity method. We apply proportionate consolidation for pipelines and other assets in which we own undivided joint interests. The financial statements have been prepared in accordance with the instructions for interim reporting as set forth by the SEC. All adjustments (consisting only of normal recurring adjustments) that in the opinion of management were necessary for a fair statement of the results for the interim periods have been reflected. All significant intercompany transactions have been eliminated in consolidation, and certain reclassifications have been made to information from previous years to conform to the current presentation.

Effective for the fourth quarter of 2018, we present "(Gains)/losses on asset sales and asset impairments, net" as a separate line item on our Condensed Consolidated Statements of Operations. To conform to the current year presentation, amounts related to gains and losses on asset sales and asset impairments previously presented in "Depreciation and amortization" are now presented in "(Gains)/losses on asset sales and asset impairments, net" on our Condensed Consolidated Statements of Operations. This change was applied retrospectively and does not affect Operating income, Net income or Net income attributable to PAGP.

The condensed consolidated balance sheet data as of December 31, 2018 was derived from audited financial statements, but does not include all disclosures required by GAAP. The results of operations for the three and six months ended June 30, 2019 should not be taken as indicative of results to be expected for the entire year.

Management judgment is required to evaluate whether PAGP controls an entity. Key areas of that evaluation include (i) determining whether an entity is a variable interest entity ("VIE"); (ii) determining whether PAGP is the primary beneficiary of a VIE, including evaluating which activities of the VIE most significantly impact its economic performance and the degree of power that PAGP and its related parties have over those activities through variable interests; and (iii) identifying events that require reconsideration of whether an entity is a VIE and continuously evaluating whether PAGP is a VIE's primary beneficiary.

We have determined that our subsidiaries, PAA and AAP, are VIEs and should be consolidated by PAGP because:

- The limited partners of PAA and AAP lack (i) substantive "kick-out rights" (i.e., the right to remove the general partner) based on a simple majority or lower vote and (ii) substantive participation rights and thus lack the ability to block actions of the general partner that most significantly impact the economic performance of PAA and AAP, respectively.
- AAP is the primary beneficiary of PAA because it has the power to direct the activities that most significantly impact PAA's performance and the right to receive benefits, and obligation to absorb losses, that could be significant to PAA.
- PAGP is the primary beneficiary of AAP because it has the power to direct the activities that most significantly impact AAP's performance and the right to receive benefits, and obligation to absorb losses, that could be significant to AAP.

With the exception of a deferred tax asset of \$1.256 billion and \$1.304 billion as of June 30, 2019 and December 31, 2018, respectively, substantially all assets and liabilities presented on PAGP's Condensed Consolidated Balance Sheet are those of PAA. Only the assets of each respective VIE can be used to settle the obligations of that individual VIE, and the creditors of each/either of those VIEs do not have recourse against the general credit of PAGP. PAGP did not provide any financial support to PAA or AAP during the six months ended June 30, 2019 or the year ended December 31, 2018. See Note 16 to our Consolidated Financial Statements included in Part IV of our 2018 Annual Report on Form 10-K for information regarding the Omnibus Agreement entered into in connection with the Simplification Transactions.

Subsequent events have been evaluated through the financial statements issuance date and have been included in the following footnotes where applicable.

Note 2—Summary of Significant Accounting Policies

Restricted Cash

Restricted cash includes cash held by us that is unavailable for general use and is comprised of amounts advanced to us by certain equity method investees related to the construction of fixed assets where we serve as construction manager. The following table presents a reconciliation of cash and cash equivalents and restricted cash reported on our Condensed Consolidated Balance Sheet that sum to the total of the amounts shown on our Condensed Consolidated Statement of Cash Flows as of the end of the period (in millions):

	ne 30, 2019
Cash and cash equivalents	\$ 428
Restricted cash	42
Total cash and cash equivalents and restricted cash	\$ 470

We did not have any restricted cash as of December 31, 2018.

Recent Accounting Pronouncements

Except as discussed below and in our 2018 Annual Report on Form 10-K, there have been no new accounting pronouncements that have become effective or have been issued during the six months ended June 30, 2019 that are of significance or potential significance to us.

Accounting Standards Updates Adopted During the Period

In February 2016, the FASB issued ASU 2016-02, *Leases*, (followed by a series of related accounting standard updates (collectively referred to as "Topic 842")), that revises the historical accounting model for leases. The most significant changes are the clarification of the definition of a lease and required lessee recognition on the balance sheet of right-of-use assets and lease liabilities with lease terms of more than 12 months (with the election of the practical expedient to exclude short-term leases on the balance sheet), including extensive quantitative and qualitative disclosures. This guidance became effective for interim and annual periods beginning after December 15, 2018. We adopted this guidance effective January 1, 2019. Our adoption resulted in the recording of additional net lease right-of-use assets and lease liabilities of approximately \$560 million and \$570 million, respectively, on January 1, 2019 and did not have a material impact on our results of operations or cash flows.

We elected the package of practical expedients permitted under the transition guidance within Topic 842, which, among other things, allowed us to carry forward the historical accounting related to lease identification, classification and indirect costs. We also elected the practical expedient related to land easements, allowing us to carry forward our accounting treatment for land easements (including rights of way) on existing agreements. Additionally, we elected the non-lease component separation practical expedient for certain classes of assets where we are the lessee and for all classes of assets where we are the lessor. Further, we elected the practical expedient which provides us with an optional transitional method, thereby applying the new guidance at the effective date, without adjusting the comparative periods and, if necessary, recognizing a cumulative-effect adjustment to the opening balance of Partners' Capital upon adoption. There was no impact to retained earnings related to our adoption. We did not elect the practical expedient related to using hindsight in determining the lease term as this was not relevant following our election of the optional transitional method. We implemented a process to evaluate the impact of adopting this guidance on each type of lease contract we have entered into with counterparties. Our implementation team determined appropriate changes to our business processes, systems and controls to support recognition and disclosure under Topic 842. In addition to the above, which primarily relates to our accounting as a lessee, our accounting from a lessor perspective remains substantially unchanged under Topic 842. See Note 11 for information about our leases.

We also adopted the ASUs listed below effective January 1, 2019 and our adoption did not have a material impact to our financial position, results of operations or cash flows (see Note 2 to our Consolidated Financial Statements included in Part IV of our 2018 Annual Report on Form 10-K for additional information regarding these ASUs):

- ASU 2018-16, Derivatives and Hedging (Topic 815): Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes;
- ASU 2018-09, Codification Improvements;
- ASU 2018-07, Compensation—Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting; and
- ASU 2017-12, Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities.

Accounting Standards Updates Issued During the Period

In May 2019, the FASB issued 2019-05, *Financial Instruments—Credit Losses (Topic 326): Targeted Transition Relief*, which provides transition relief and allows entities to elect the fair value option on certain financial instruments. We expect to adopt this guidance on January 1, 2020, and we are currently evaluating the effect that our adoption will have on our financial position, results of operations and cash flows.

In April 2019, the FASB issued 2019-04, *Codification Improvements to Topic 326, Financial Instruments—Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments*, which clarifies certain aspects of accounting for credit losses, hedging activities and financial instruments. We expect to adopt this guidance on January 1, 2020, and we are currently evaluating the effect that our adoption will have on our financial position, results of operations and cash flows.

Note 3—Revenues and Accounts Receivable

Revenue Recognition

We disaggregate our revenues by segment and type of activity under ASC Topic 606, *Revenues from Contracts with Customers* ("Topic 606"). These categories depict how the nature, amount, timing and uncertainty of revenues and cash flows are affected by economic factors. See Note 3 to our Consolidated Financial Statements included in Part IV of our 2018 Annual Report on Form 10-K for additional information regarding our types of revenues and policies for revenue recognition.

The following tables present our Supply and Logistics segment, Transportation segment and Facilities segment revenues from contracts with customers disaggregated by type of activity (in millions):

	 Three Mo Jur	nths Ei 1e 30,	nded	. <u></u>	ıded		
	2019		2018		2019		2018
Supply and Logistics segment revenues from contracts with customers							
Crude oil transactions	\$ 7,595	\$	7,649	\$	14,532	\$	14,672
NGL and other transactions	269		475		1,178		1,626
Total Supply and Logistics segment revenues from contracts with customers	\$ 7,864	\$	8,124	\$	15,710	\$	16,298

	 Three Mo Jun	nths E e 30,	nded		ıded		
	2019 2018				2019		2018
Transportation segment revenues from contracts with customers							
Tariff activities:							
Crude oil pipelines	\$ 494	\$	412	\$	971	\$	801
NGL pipelines	22		24		50		51
Total tariff activities	 516		436		1,021		852
Trucking	35		34		74		68
Total Transportation segment revenues from contracts with customers	\$ 551	\$	470	\$	1,095	\$	920

	 Three Mo Jur	nded	Six Months Ended June 30,				
	2019 2018				2019		2018
Facilities segment revenues from contracts with customers							
Crude oil, NGL and other terminalling and storage	\$ 177	\$	171	\$	349	\$	337
NGL and natural gas processing and fractionation	87		91		175		191
Rail load / unload	19		16		39		32
Total Facilities segment revenues from contracts with customers	\$ 283	\$	278	\$	563	\$	560

Reconciliation to Total Revenues of Reportable Segments. The following table presents the reconciliation of our revenues from contracts with customers to segment revenues and total revenues as disclosed in our Condensed Consolidated Statements of Operations (in millions):

Three Months Ended June 30, 2019	Trar	sportation	Facilities	Supply and Logistics	Total
Revenues from contracts with customers	\$	551	\$ 283	\$ 7,864	\$ 8,698
Other items in revenues		8	8	51	67
Total revenues of reportable segments	\$	559	\$ 291	\$ 7,915	\$ 8,765
Intersegment revenues					 (512)
Total revenues					\$ 8,253

Three Months Ended June 30, 2018	Trans	portation	Facilities	Supply and Logistics			Total
Revenues from contracts with customers	\$	470	\$ 278	\$	8,124	\$	8,872
Other items in revenues		5	6		(343)		(332)
Total revenues of reportable segments	\$	475	\$ 284	\$	7,781	\$	8,540
Intersegment revenues							(460)
Total revenues						\$	8,080

Six Months Ended June 30, 2019	Tra	nsportation	Facilities	Supply and Logistics	Total
Revenues from contracts with customers	\$	1,095	\$ 563	\$ 15,710	\$ 17,368
Other items in revenues		20	26	228	274
Total revenues of reportable segments	\$	1,115	\$ 589	\$ 15,938	\$ 17,642
Intersegment revenues					(1,014)
Total revenues					\$ 16,628

Six Months Ended June 30, 2018	Tran	sportation	Facilities	Supply and Logistics	Total
Revenues from contracts with customers	\$	920	\$ 560	\$ 16,298	\$ 17,778
Other items in revenues		9	16	(405)	(380)
Total revenues of reportable segments	\$	929	\$ 576	\$ 15,893	\$ 17,398
Intersegment revenues					(920)
Total revenues					\$ 16,478

Minimum Volume Commitments. We have certain agreements that require counterparties to transport or throughput a minimum volume over an agreed upon period. At June 30, 2019 and December 31, 2018, counterparty deficiencies associated with contracts with customers and buy/sell arrangements that include minimum volume commitments totaled \$54 million and \$62 million, respectively, of which \$35 million and \$40 million, respectively, was recorded as a contract liability. The remaining balance of \$19 million and \$22 million at June 30, 2019 and December 31, 2018, respectively, was related to deficiencies for which the counterparties had not met their contractual minimum commitments and were not reflected in our Condensed Consolidated Financial Statements as we had not yet billed or collected such amounts.

Contract Balances. Our contract balances consist of amounts received associated with services or sales for which we have not yet completed the related performance obligation. The following table presents the change in the contract liability balance during the six months ended June 30, 2019 (in millions):

	Contra	act Liabilities
Balance at December 31, 2018	\$	338
Amounts recognized as revenue		(225)
Additions ⁽¹⁾		206
Other		(1)
Balance at June 30, 2019	\$	318

⁽¹⁾ Includes approximately \$130 million associated with crude oil sales agreements that were entered into in conjunction with storage arrangements and future inventory exchanges. Such amount is expected to be recognized as revenue in the third quarter of 2019. The inventory that has been sold under these agreements is reflected in "Other current assets" on our Condensed Consolidated Balance Sheet until all of our performance obligations are complete.

Remaining Performance Obligations. Topic 606 requires a presentation of information about partially and wholly unsatisfied performance obligations under contracts that exist as of the end of the period. The information includes the amount of consideration allocated to those remaining performance obligations and the timing of revenue recognition of those remaining performance obligations. Certain contracts meet the requirements for the presentation as remaining performance obligations. These arrangements include a fixed minimum level of service, typically a set volume of service, and do not contain any variability other than expected timing within a limited range. These contracts are all within the scope of Topic 606. The following table presents the amount of consideration associated with remaining performance obligations for the population of contracts with external customers meeting the presentation requirements as of June 30, 2019 (in millions):

	Remainder of 2019		2020		2021		2022	2023	2024 and Thereafter	
Pipeline revenues supported by minimum volume commitments and capacity agreements ⁽¹⁾	\$	79	\$ 156	\$	163	\$	159	\$ 158	\$	805
Storage, terminalling and throughput agreement revenues		220	361		256		195	160		355
Total	\$	299	\$ 517	\$	419	\$	354	\$ 318	\$	1,160

⁽¹⁾ Calculated as volumes committed under contracts multiplied by the current applicable tariff rate.

The presentation above does not include (i) expected revenues from legacy shippers not underpinned by minimum volume commitments, including pipelines where there are no or limited alternative pipeline transportation options, (ii) intersegment revenues and (iii) the amount of consideration associated with certain income generating contracts, which include a fixed minimum level of service, that are either not within the scope of Topic 606 or do not meet the requirements for presentation as remaining performance obligations under Topic 606. The following are examples of contracts that are not included in the table above because they are not within the scope of Topic 606 or do not meet the Topic 606 requirements for presentation:

• Minimum volume commitments on certain of our joint venture pipeline systems;

- Acreage dedications Contracts include those related to the Permian Basin, Eagle Ford, Central, Rocky Mountain and Canada regions;
- Supply and Logistics buy/sell arrangements Contracts include agreements with future committed volumes on certain Permian Basin, Eagle Ford, Central and Canada region systems;
- All other Supply and Logistics contracts, due to the election of practical expedients related to variable consideration and short-term contracts;
- Transportation and Facilities contracts that are short-term;
- Contracts within the scope of ASC Topic 842, Leases; and
- Contracts within the scope of ASC Topic 815, Derivatives and Hedging.

Trade Accounts Receivable and Other Receivables, Net

Our accounts receivable are primarily from purchasers and shippers of crude oil and, to a lesser extent, purchasers of NGL. To mitigate credit risk related to our accounts receivable, we utilize a rigorous credit review process. We closely monitor market conditions and perform credit reviews of each customer to make a determination with respect to the amount, if any, of open credit to be extended to any given customer and the form and amount of financial performance assurances we require. Such financial assurances are commonly provided to us in the form of advance cash payments, standby letters of credit, credit insurance or parental guarantees. Additionally, in an effort to mitigate credit risk, a significant portion of our transactions with counterparties are settled on a net-cash basis. For a majority of these net-cash arrangements, we also enter into netting agreements (contractual agreements that allow us to offset receivables and payables with those counterparties against each other on our balance sheet).

Accounts receivable from the sale of crude oil are generally settled with counterparties on the industry settlement date, which is typically in the month following the month in which the title transfers. Otherwise, we generally invoice customers within 30 days of when the products or services were provided and generally require payment within 30 days of the invoice date. We review all outstanding accounts receivable balances on a monthly basis and record a reserve for amounts that we expect will not be fully recovered. We do not apply actual balances against the reserve until we have exhausted substantially all collection efforts. At June 30, 2019 and December 31, 2018, substantially all of our trade accounts receivable (net of allowance for doubtful accounts) were less than 30 days past their scheduled invoice date. Our allowance for doubtful accounts receivable totaled \$3 million at both June 30, 2019 and December 31, 2018. Although we consider our allowance for doubtful accounts receivable to be adequate, actual amounts could vary significantly from estimated amounts.

The following is a reconciliation of trade accounts receivable from revenues from contracts with customers to total Trade accounts receivable and other receivables, net as presented on our Condensed Consolidated Balance Sheets (in millions):

	une 30, 2019	Decem	oer 31, 2018
Trade accounts receivable arising from revenues from contracts with customers	\$ 2,563	\$	2,277
Other trade accounts receivables and other receivables ⁽¹⁾	3,722		2,732
Impact due to contractual rights of offset with counterparties	(3,450)		(2,555)
Trade accounts receivable and other receivables, net	\$ 2,835	\$	2,454

⁽¹⁾ The balance is comprised primarily of accounts receivable associated with buy/sell arrangements that are not within the scope of Topic 606.

Note 4-Net Income Per Class A Share

Basic net income per Class A share is determined by dividing net income attributable to PAGP by the weighted average number of Class A shares outstanding during the period. Our Class B and Class C shares do not share in the earnings of the Partnership; accordingly, basic and diluted net income per Class B and Class C share has not been presented.



Diluted net income per Class A share is determined by dividing net income attributable to PAGP by the diluted weighted average number of Class A shares outstanding during the period. For purposes of calculating diluted net income per Class A share, both the net income attributable to PAGP and the diluted weighted average number of Class A shares outstanding consider the impact of possible future exchanges of (i) AAP units and the associated Class B shares into our Class A shares and (ii) certain Class B units of AAP (referred to herein as "AAP Management Units") into our Class A shares. In addition, the calculation of the diluted weighted average number of Class A shares outstanding considers the effect of potentially dilutive awards under the Plains GP Holdings, L.P. Long-Term Incentive Plan (the "PAGP LTIP").

All AAP Management Units that have satisfied the applicable performance conditions are considered potentially dilutive. Exchanges of potentially dilutive AAP units and AAP Management Units are assumed to have occurred at the beginning of the period and the incremental income attributable to PAGP resulting from the assumed exchanges is representative of the incremental income that would have been attributable to PAGP if the assumed exchanges occurred on that date. See Note 12 to our Consolidated Financial Statements included in Part IV of our 2018 Annual Report on Form 10-K for information regarding exchanges of AAP units and AAP Management Units. PAGP LTIP awards that are deemed to be dilutive are reduced by a hypothetical share repurchase based on the remaining unamortized fair value, as prescribed by the treasury stock method in guidance issued by the FASB. See Note 17 to our Consolidated Financial Statements included in Part IV-K for information regarding PAGP LTIP awards.

For the three and six months ended June 30, 2019 and 2018, the possible exchange of any AAP units would have had an antidilutive effect on basic net income per Class A share. For the three months ended June 30, 2019, the possible exchange of AAP Management Units would have had a dilutive effect on basic net income per Class A share and for the six months ended June 30, 2019 and the three and six months ended June 30, 2018, the possible exchange of AAP Management units would not have had a dilutive effect on basic net income per Class A share. For the three and six months ended June 30, 2019 and 2018, our PAGP LTIP awards were dilutive; however, there were less than 0.1 million dilutive LTIP awards for each period, which did not change the presentation of weighted average Class A shares outstanding or net income per Class A share.

The following table sets forth the computation of basic and diluted net income per Class A share (in millions, except per share data):

	Three Months Ended June 30,				 Six Months Ended June 30,			
		2019		2018	2019		2018	
Basic Net Income per Class A Share								
Net income attributable to PAGP	\$	66	\$	7	\$ 213	\$	44	
Basic weighted average Class A shares outstanding		162		157	161		157	
Basic net income per Class A share	\$	0.41	\$	0.05	\$ 1.32	\$	0.28	
Diluted Net Income per Class A Share								
Net income attributable to PAGP	\$	66	\$	7	\$ 213	\$	44	
Incremental net income attributable to PAGP resulting from assumed exchang of AAP Management Units	e	_		_	_		_	
Net income attributable to PAGP including incremental net income from assumed exchange of AAP Management Units	\$	66	\$	7	\$ 213	\$	44	
Basic weighted average Class A shares outstanding		162		157	161		157	
Dilutive shares resulting from assumed exchange of AAP Management Units		2		_	 			
Diluted weighted average Class A shares outstanding		164		157	 161		157	
Diluted net income per Class A share	\$	0.40	\$	0.05	\$ 1.32	\$	0.28	

Note 5—Inventory, Linefill and Base Gas and Long-term Inventory

Inventory, linefill and base gas and long-term inventory consisted of the following (barrels and natural gas volumes in thousands and carrying value in millions):

	June 30, 2019					December 31, 2018						
	Volumes	Unit of Measure	C	Carrying Value	Price/ Unit ⁽¹⁾		Volumes	Unit of Measure	C	Carrying Value		Price/ Unit ⁽¹⁾
Inventory									_			
Crude oil	8,177	barrels	\$	427	\$	52.22	9,657	barrels	\$	367	\$	38.00
NGL	6,887	barrels		117	\$	16.99	10,384	barrels		262	\$	25.23
Other	N/A			14		N/A	N/A			11		N/A
Inventory subtotal				558						640		
Linefill and base gas												
Crude oil	13,325	barrels		766	\$	57.49	13,312	barrels		761	\$	57.17
NGL	1,699	barrels		48	\$	28.25	1,730	barrels		47	\$	27.17
Natural gas	24,976	Mcf		108	\$	4.32	24,976	Mcf		108	\$	4.32
Linefill and base gas subtotal				922						916		
Long-term inventory												
Crude oil	2,448	barrels		126	\$	51.47	1,890	barrels		79	\$	41.80
NGL	1,875	barrels		26	\$	13.87	2,368	barrels		57	\$	24.07
Long-term inventory subtotal				152						136		
Total			\$	1,632					\$	1,692		

⁽¹⁾ Price per unit of measure is comprised of a weighted average associated with various grades, qualities and locations. Accordingly, these prices may not coincide with any published benchmarks for such products.

Note 6—Goodwill

Goodwill by segment and changes in goodwill are reflected in the following table (in millions):

	1	Transportation	Facilities	Supply and Logistics		Total
Balance at December 31, 2018	\$	1,040	\$ 978	\$	503	\$ 2,521
Foreign currency translation adjustments		10	 4		2	 16
Balance at June 30, 2019	\$	1,050	\$ 982	\$	505	\$ 2,537

We utilized a quantitative assessment in our goodwill impairment test as of June 30, 2019 and determined that there was no impairment of goodwill.

Note 7—Investments in Unconsolidated Entities

Our investments in unconsolidated entities consisted of the following (in millions, except percentage data):

	Own Interes Type of Operation 30,			20.2010		
Entity ⁽¹⁾		30, 2019	June 30, 2019		December 31, 2018	
Advantage Pipeline Holdings LLC	Crude Oil Pipeline	50%	\$	74	\$ 72	
BridgeTex Pipeline Company, LLC	Crude Oil Pipeline	20%		434	435	
Cactus II Pipeline LLC	Crude Oil Pipeline ⁽²⁾	65%		602	455	
Caddo Pipeline LLC	Crude Oil Pipeline	50%		65	65	
Capline Pipeline Company LLC	Crude Oil Pipeline ⁽³⁾	54%		466	—	
Cheyenne Pipeline LLC	Crude Oil Pipeline	50%		43	44	
Diamond Pipeline LLC	Crude Oil Pipeline	50%		478	479	
Eagle Ford Pipeline LLC	Crude Oil Pipeline	50%		386	383	
Eagle Ford Terminals Corpus Christi LLC ("Eagle Ford						
Terminals")	Crude Oil Terminal and Dock ⁽²⁾	50%		120	108	
Midway Pipeline LLC	Crude Oil Pipeline	50%		76	78	
Red Oak Pipeline LLC ("Red Oak")	Crude Oil Pipeline ⁽²⁾	50%		1	—	
Saddlehorn Pipeline Company, LLC	Crude Oil Pipeline	40%		223	215	
Settoon Towing, LLC	Barge Transportation Services	50%		58	58	
STACK Pipeline LLC	Crude Oil Pipeline	50%		117	120	
White Cliffs Pipeline, LLC	Crude Oil Pipeline	36%		196	190	
Wink to Webster Pipeline LLC ("W2W Pipeline")	Crude Oil Pipeline ⁽²⁾	20%	(4)	38		
Total investments in unconsolidated entities			\$	3,377	\$ 2,702	

⁽¹⁾ Except for Eagle Ford Terminals, which is reported in our Facilities segment, the financial results from the entities are reported in our Transportation segment.

⁽²⁾ Asset is currently under construction by the entity and has not yet been placed in service.

⁽³⁾ The Capline pipeline was taken out of service in the fourth quarter of 2018. Subsequent to June 30, 2019, the owners of Capline Pipeline Company LLC sanctioned the reversal of the Capline pipeline system.

⁽⁴⁾ Subsequent to June 30, 2019, our ownership interest in W2W Pipeline was reduced to 16%, as discussed below.

Formations

Capline LLC. During the first quarter of 2019, the owners of the Capline pipeline system, which originates in St. James, Louisiana and terminates in Patoka, Illinois, contributed their undivided joint interests in the system for equity interests in a legal entity, Capline Pipeline Company LLC ("Capline LLC"). After the contribution, Capline LLC owns 100% of the pipeline system. Each owner's undivided joint interest in the Capline pipeline system prior to the transaction is equal to each owner's equity interest in Capline LLC. Although we own a majority of Capline LLC's equity, we do not have a controlling financial interest in Capline LLC because the other members have substantive participating rights. Therefore, we account for our ownership interest in Capline LLC as an equity method investment.

The transaction resulted in a loss of control of our undivided joint interest, which was derecognized and contributed to Capline LLC. The loss of control required us to measure our equity interest in Capline LLC at fair value. At the time of the transaction, our 54% undivided joint interest in the Capline pipeline system had a carrying value of \$177 million, which primarily related to property and equipment included in our Transportation segment. We determined the fair value of our investment in Capline LLC to be approximately \$444 million, resulting in the recognition of a gain of \$267 million during the six months ended June 30, 2019. Such gain is included in "Gain on investment in unconsolidated entities" on our Condensed Consolidated Statement of Operations.

The fair value of our investment in Capline LLC was based on an income approach utilizing a discounted cash flow analysis. This approach requires us to make long-term forecasts of future revenues and expenditures. Those forecasts require the use of various assumptions and estimates which include those related to the timing and amount of capital expenditures, and the expected tariff rates and volumes of crude oil. These assumptions are based on a potential reversal of the Capline pipeline and the initiation of southbound service on the Capline pipeline from Patoka to St. James, and potential service on our Diamond joint venture pipeline and the Capline pipeline from Cushing, Oklahoma to St. James. We probability weighted various forecasted cash flow scenarios utilized in the analysis when we considered the possible outcomes. We used a discount rate representing our estimate of the risk adjusted discount rate that would be used by market participants. These projects are dependent upon shipper interest. If shipper interest varies from the levels assumed in our model, the related cash flows, and thus the fair value of our investment, could be materially impacted. The fair value of our investment was determined using significant unobservable inputs, or Level 3 inputs in the fair value hierarchy.

W2W Pipeline. In the first quarter of 2019, we announced the formation of W2W Pipeline, a joint venture with subsidiaries of ExxonMobil and Lotus Midstream, LLC. Subsequent to June 30, 2019, three additional entities joined as partners in W2W Pipeline. As a result, our ownership interest in W2W Pipeline decreased from 20% to 16%. We account for our interest in W2W Pipeline under the equity method of accounting. W2W Pipeline is currently developing a new pipeline system that will originate in the Permian Basin in West Texas and transport crude oil to the Texas Gulf Coast. The pipeline system will provide more than 1 million barrels per day of crude oil and condensate capacity, and the project is targeted to commence operations in the first half of 2021.

Red Oak. In June 2019, we announced the formation of Red Oak, a joint venture with a subsidiary of Phillips 66. We own a 50% interest in Red Oak, which is currently developing a new pipeline that will provide crude oil transportation service from Cushing, Oklahoma, and the Permian Basin in West Texas to Corpus Christi, Ingleside, Houston and Beaumont, Texas. Initial service from Cushing to the Gulf Coast is targeted to commence as early as the first quarter of 2021, subject to receipt of applicable permits and regulatory approvals. We account for our interest in Red Oak under the equity method of accounting.

In addition to contributing cash for construction of the Red Oak pipeline system, we have also entered into a pipeline capacity agreement and will be contributing 300,000 barrels of capacity on our Sunrise II pipeline once the Red Oak pipeline system is operational. Once the Red Oak pipeline system is operational, we will record a \$160 million increase to our investment in Red Oak associated with our contribution of the capacity and corresponding deferred revenue that will be recognized in revenue on a straight-line basis over the initial term of 33 years.

Note 8—Debt

Debt consisted of the following (in millions):

	June 30, 2019		December 2018	
SHORT-TERM DEBT				
PAA commercial paper notes, bearing a weighted-average interest rate of 3.0% $^{(1)}$	\$	218	\$	
PAA senior secured hedged inventory facility, bearing a weighted-average interest rate of 3.5% $^{(1)}$		100		—
Other		152		66
Total short-term debt		470		66

LONG-TERM DEBT PAA senior notes, net of unamortized discounts and debt issuance costs of \$55 and \$59, respectively⁽²⁾ 8,945 8,941 PAA GO Zone term loans, net of debt issuance costs of \$1 and \$2, respectively, bearing a weighted-average interest rate of 3.2% and 3.1%, respectively 199 198 Other 32 4 Total long-term debt 9,176 9,143 Total debt (3) \$ 9,646 \$ 9,209

⁽¹⁾ We classified these PAA commercial paper notes and credit facility borrowings as short-term as of June 30, 2019, as these notes and borrowings were primarily designated as working capital borrowings, were required to be repaid within one year and were primarily for hedged NGL and crude oil inventory and NYMEX and ICE margin deposits.

(2) As of June 30, 2019, we classified PAA's \$500 million, 5.75% senior notes due January 2020 and PAA's \$500 million, 2.60% senior notes due December 2019 as long-term, and as of December 31, 2018, we classified PAA's \$500 million, 2.60% senior notes due December 2019 as long-term based on PAA's ability and intent to refinance such amounts on a long-term basis.

(3) PAA's fixed-rate senior notes had a face value of approximately \$9.0 billion at both June 30, 2019 and December 31, 2018. We estimated the aggregate fair value of these notes as of June 30, 2019 and December 31, 2018 to be approximately \$9.3 billion and \$8.6 billion, respectively. PAA's fixed-rate senior notes are traded among institutions, and these trades are routinely published by a reporting service. Our determination of fair value is based on reported trading activity near the end of the reporting period. We estimate that the carrying value of outstanding borrowings under PAA's credit facilities, commercial paper program and GO Zone term loans approximates fair value as interest rates reflect current market rates. The fair value estimates for PAA's senior notes, credit facilities, commercial paper program and GO Zone term loans are based upon observable market data and are classified in Level 2 of the fair value hierarchy.

Borrowings and Repayments

Total borrowings under the PAA credit facilities and commercial paper program for the six months ended June 30, 2019 and 2018 were approximately \$4.1 billion and \$23.5 billion, respectively. Total repayments under the PAA credit facilities and commercial paper program were approximately \$3.8 billion and \$23.6 billion for the six months ended June 30, 2019 and 2018, respectively. The variance in total gross borrowings and repayments is impacted by various business and financial factors including, but not limited to, the timing, average term and method of general partnership borrowing activities.

Letters of Credit

In connection with our supply and logistics activities, we provide certain suppliers with irrevocable standby letters of credit to secure our obligation for the purchase and transportation of crude oil, NGL and natural gas. Additionally, we issue letters of credit to support insurance programs, derivative transactions, including hedging-related margin obligations, and construction activities. At June 30, 2019 and December 31, 2018, we had outstanding letters of credit of \$153 million and \$184 million, respectively.

Note 9—Partners' Capital and Distributions

Shares Outstanding

The following tables present the activity for our Class A shares, Class B shares and Class C shares:

	Class A Shares	Class B Shares	Class C Shares
Outstanding at December 31, 2018	159,485,588	119,604,338	516,938,280
Redemption Right exercises ⁽¹⁾		(91,672)	91,672
Other			226,814
Outstanding at March 31, 2019	159,485,588	119,512,666	517,256,766
Exchange Right exercises ⁽¹⁾	7,331,745	(7,331,745)	—
Redemption Right exercises ⁽¹⁾	—	(12,193,771)	12,193,771
Other	—	—	603,456
Outstanding at June 30, 2019	166,817,333	99,987,150	530,053,993

	Class A Shares	Class B Shares	Class C Shares
Outstanding at December 31, 2017	156,111,139	126,984,572	510,925,432
Exchange Right exercises ⁽¹⁾	907,899	(907,899)	
Redemption Right exercises ⁽¹⁾	—	(39,224)	39,224
Issuance of Series A preferred units by a subsidiary	—	—	1,393,926
Other	—	—	17,766
Outstanding at March 31, 2018	157,019,038	126,037,449	512,376,348
Exchange Right exercises ⁽¹⁾	935,092	(935,092)	
Redemption Right exercises ⁽¹⁾	—	(3,084,027)	3,084,027
Outstanding at June 30, 2018	157,954,130	122,018,330	515,460,375

⁽¹⁾ See Note 12 to our Consolidated Financial Statements included in Part IV of our 2018 Annual Report on Form 10-K for information regarding Exchange Rights and Redemption Rights.

Exchange Right and Redemption Right Exercises

In May 2019, among other transactions, an affiliate of The Energy & Minerals Group ("EMG") exercised its Exchange Right and Redemption Right. The Redemption Right exercise resulted in the issuance of additional Class C shares to PAA. The Exchange Right exercise resulted in the transfer of a portion of partners' capital from noncontrolling interests to our Class A shareholders and the associated recognition of a deferred tax asset that was recorded as a component of partners' capital as it resulted from transactions with shareholders.

Distributions

The following table details distributions to our Class A shareholders paid during or pertaining to the first six months of 2019 (in millions, except per share data):

Distribution Payment Date	Distributions to Class A Shareholders		Distributions per Class A Share	
August 14, 2019 ⁽¹⁾	\$	60	\$	0.36
May 15, 2019	\$	57	\$	0.36
February 14, 2019	\$	48	\$	0.30

⁽¹⁾ Payable to shareholders of record at the close of business on July 31, 2019 for the period from April 1, 2019 through June 30, 2019.

Consolidated Subsidiaries

Noncontrolling Interests in Subsidiaries

As of June 30, 2019, noncontrolling interests in our subsidiaries consisted of (i) limited partner interests in PAA including a 66% interest in PAA's common units and PAA's Series A preferred units combined and 100% of PAA's Series B preferred units, (ii) an approximate 37% limited partner interest in AAP and (iii) a 33% interest in Red River Pipeline Company LLC ("Red River LLC"), as discussed further below.

In May 2019, we formed a joint venture, Red River LLC, with Delek Logistics Partners, LP ("Delek") on our Red River pipeline system. We received approximately \$128 million for Delek's 33% interest in Red River LLC. We consolidate Red River LLC, with Delek's 33% interest accounted for as a noncontrolling interest.

Subsidiary Distributions

PAA Series A Preferred Unit Distributions. The following table details distributions to PAA's Series A preferred unitholders paid during or pertaining to the first six months of 2019 (in millions, except per unit data):

	Series A Preferred Unitholders				
Distribution Payment Date	Cash D	istribution	Distribution per Unit		
August 14, 2019 ⁽¹⁾	\$	37	\$	0.525	
May 15, 2019	\$	37	\$	0.525	
February 14, 2019	\$	37	\$	0.525	

⁽¹⁾ Payable to unitholders of record at the close of business on July 31, 2019 for the period from April 1, 2019 through June 30, 2019. At June 30, 2019, such amount was accrued to distributions payable in "Other current liabilities" on our Condensed Consolidated Balance Sheet.

PAA Series B Preferred Unit Distributions. Distributions on PAA's Series B preferred units are payable semi-annually in arrears on the 15th day of May and November. The following table details distributions paid to PAA's Series B preferred unitholders during the first six months of 2019 (in millions, except per unit data):

		Series B Prefer	red Unitho	lders
Distribution Payment Date	Ca	ash Distribution	Distrib	oution per Unit
May 15, 2019	\$	\$ 24.5		30.625

As of June 30, 2019, we had accrued approximately \$6 million of distributions payable to PAA's Series B preferred unitholders in "Other current liabilities" on our Condensed Consolidated Balance Sheet.

PAA Common Unit Distributions. The following table details distributions to PAA's common unitholders paid during or pertaining to the first six months of 2019 (in millions, except per unit data):

		Common	Unith	olders		0			
Distribution Payment Date	Public			AAP		Total Cash Distribution		Cash Distribution per Common Unit	
August 14, 2019 ⁽¹⁾	\$	166	\$	96	\$	262	\$	0.36	
May 15, 2019	\$	161	\$	101	\$	262	\$	0.36	
February 14, 2019	\$	134	\$	84	\$	218	\$	0.30	

⁽¹⁾ Payable to unitholders of record at the close of business on July 31, 2019 for the period from April 1, 2019 through June 30, 2019.

AAP Distributions. The following table details the distributions to AAP's partners paid during or pertaining to the first six months of 2019 from distributions received from PAA (in millions):

	Distribution to AAP's Partners								
Distribution Payment Date	Noncontrolling Intere	sts		PAGP	Total Ca	sh Distributions			
August 14, 2019 ⁽¹⁾	\$	36	\$	60	\$	96			
May 15, 2019	\$	44	\$	57	\$	101			
February 14, 2019	\$	36	\$	48	\$	84			

⁽¹⁾ Payable to unitholders of record at the close of business on July 31, 2019 for the period from April 1, 2019 through June 30, 2019.

Note 10—Derivatives and Risk Management Activities

We identify the risks that underlie our core business activities and use risk management strategies to mitigate those risks when we determine that there is value in doing so. Our policy is to use derivative instruments for risk management purposes and not for the purpose of speculating on hydrocarbon commodity (referred to herein as "commodity") price changes. We use various derivative instruments to manage our exposure to (i) commodity price risk, as well as to optimize our profits, (ii) interest rate risk and (iii) currency exchange rate risk. Our commodity price risk management policies and procedures are designed to help ensure that our hedging activities address our risks by monitoring our derivative positions, as well as physical volumes, grades, locations, delivery schedules and storage capacity. Our interest rate and currency exchange rate risk management policies and procedures are designed to monitor our derivative positions and ensure that those positions are consistent with our objectives and approved strategies. When we apply hedge accounting, our policy is to formally document all relationships between hedging instruments and hedged items, as well as our risk management objectives for undertaking the hedge. This process includes specific identification of the hedging instrument and the hedged transaction, the nature of the risk being hedged and how the hedging instrument's effectiveness will be assessed. At the inception of the hedging relationship, we assess whether the derivatives employed are highly effective in offsetting changes in cash flows of anticipated hedged transactions. Throughout the hedging relationship, retrospective and prospective hedge effectiveness is assessed on a qualitative basis.

Commodity Price Risk Hedging

Our core business activities involve certain commodity price-related risks that we manage in various ways, including through the use of derivative instruments. Our policy is to (i) only purchase inventory for which we have a sales market, (ii) structure our sales contracts so that price fluctuations do not materially affect our operating income and (iii) not acquire and hold physical inventory or derivatives for the purpose of speculating on commodity price changes. The material commodity-related risks inherent in our business activities can be divided into the following general categories:

Commodity Purchases and Sales — In the normal course of our operations, we purchase and sell commodities. We use derivatives to manage the associated risks and to optimize profits. As of June 30, 2019, net derivative positions related to these activities included:

- A net long position of 5.8 million barrels associated with our crude oil purchases, which was unwound ratably during July 2019 to match monthly average pricing.
- A net short time spread position of 6.0 million barrels, which hedges a portion of our anticipated crude oil lease gathering purchases through December 2020.
- A net crude oil basis spread position of 36.2 million barrels at multiple locations through December 2021. These derivatives allow us to lock in grade basis differentials.
- A net short position of 5.6 million barrels through December 2021 related to anticipated net sales of crude oil and NGL inventory.

Storage Capacity Utilization — For capacity allocated to our supply and logistics operations, we have utilization risk in a backwardated market structure. As of June 30, 2019, we used derivatives to manage the risk of not utilizing an average of approximately 0.9 million barrels per month of storage capacity through January 2021. These positions involve no outright price exposure, but instead enable us to profitably use the capacity to store hedged crude oil.

Pipeline Loss Allowance Oil — As is common in the pipeline transportation industry, our tariffs incorporate a loss allowance factor. We utilize derivative instruments to hedge a portion of the anticipated sales of the loss allowance oil that is to be collected under our tariffs. As of June 30, 2019, our PLA hedges included a short position consisting of crude oil futures of 1.3 million barrels through December 2020 and a long call option position of 2.4 million barrels through December 2021.

Natural Gas Processing/NGL Fractionation — We purchase natural gas for processing and operational needs. Additionally, we purchase NGL mix for fractionation and sell the resulting individual specification products (including ethane, propane, butane and condensate). In conjunction with these activities, we hedge the price risk associated with the purchase of the natural gas and the subsequent sale of the individual specification products. The following table summarizes our open derivative positions utilized to hedge the price risk associated with anticipated purchases and sales related to our natural gas processing and NGL fractionation activities as of June 30, 2019:

	Notional Volume	
	(Short)/Long	Remaining Tenor
Natural gas purchases	77.8 Bcf	December 2022
Propane sales	(10.8) MMbls	March 2021
Butane sales	(3.2) MMbls	March 2021
Condensate sales (WTI position)	(1.2) MMbls	March 2021
Power supply requirements ⁽¹⁾	1.1 TWh	December 2022

⁽¹⁾ Power position to hedge a portion of our power supply requirements at our Canadian natural gas processing and fractionation plants.

Physical commodity contracts that meet the definition of a derivative but are ineligible, or not designated, for the normal purchases and normal sales scope exception are recorded on the balance sheet at fair value, with changes in fair value recognized in earnings. We have determined that substantially all of our physical commodity contracts qualify for the normal purchases and normal sales scope exception.

Interest Rate Risk Hedging

We use interest rate derivatives to hedge the benchmark interest rate associated with interest payments occurring as a result of debt issuances. The derivative instruments we use to manage this risk consist of forward starting interest rate swaps and treasury locks. These derivatives are designated as cash flow hedges. As such, changes in fair value are deferred in AOCI and are reclassified to interest expense as we incur the interest expense associated with the underlying debt.

The following table summarizes the terms of our outstanding interest rate derivatives as of June 30, 2019 (notional amounts in millions):

Hedged Transaction	Number and Types of Derivatives Employed	lotional Amount	Expected Termination Date	Average Rate Locked	Accounting Treatment
Anticipated interest payments	8 forward starting swaps (30-year)	\$ 200	12/13/2019	2.34%	Cash flow hedge
Anticipated interest payments	8 forward starting swaps (30-year)	\$ 200	6/15/2020	3.06%	Cash flow hedge

Currency Exchange Rate Risk Hedging

Because a significant portion of our Canadian business is conducted in CAD, we use foreign currency derivatives to minimize the risk of unfavorable changes in exchange rates. These instruments include foreign currency exchange contracts, forwards and options.

Our use of foreign currency derivatives include (i) derivatives we use to hedge currency exchange risk created by the use of USD-denominated commodity derivatives to hedge commodity price risk associated with CAD-denominated commodity purchases and sales and (ii) foreign currency exchange contracts we use to manage our Canadian business cash requirements.

The following table summarizes our open forward exchange contracts as of June 30, 2019 (in millions):

		USD		CAD	Average Exchange Rate USD to CAD
Forward exchange contracts that exchange CAD for USD:					
	2019	\$ 63 5		83	\$1.00 - \$1.32
Forward exchange contracts that exchange USD for CAD:					
	2019	\$ 165	\$	220	\$1.00 - \$1.33

Preferred Distribution Rate Reset Option

A derivative feature embedded in a contract that does not meet the definition of a derivative in its entirety must be bifurcated and accounted for separately if the economic characteristics and risks of the embedded derivative are not clearly and closely related to those of the host contract. The Preferred Distribution Rate Reset Option of the PAA Series A preferred units is an embedded derivative that must be bifurcated from the related host contract, the PAA partnership agreement, and recorded at fair value on our Condensed Consolidated Balance Sheets. Corresponding changes in fair value are recognized in "Other income/(expense), net" in our Condensed Consolidated Statement of Operations. See Note 12 to our Consolidated Financial Statements included in Part IV of our 2018 Annual Report on Form 10-K for additional information regarding the Series A preferred units and Preferred Distribution Rate Reset Option.

Summary of Financial Impact

We record all open derivatives on the balance sheet as either assets or liabilities measured at fair value. Changes in the fair value of derivatives are recognized currently in earnings unless specific hedge accounting criteria are met. For derivatives designated as cash flow hedges, changes in fair value are deferred in AOCI and recognized in earnings in the periods during which the underlying physical transactions are recognized in earnings. Derivatives that are not designated as a hedging instrument and derivatives that do not qualify for hedge accounting are recognized in earnings each period. Cash settlements associated with our derivative activities are classified within the same category as the related hedged item in our Condensed Consolidated Statements of Cash Flows.

A summary of the impact of our derivatives recognized in earnings is as follows (in millions):

	Three Months Ended June 30, 2019														
Location of Gain/(Loss)		Commodity Derivatives	F	Foreign Currency Derivatives	J	Preferred Distribution Rate Reset Option		Interest Rate Derivatives		Total					
Supply and Logistics segment revenues ⁽¹⁾	\$	56	\$	2	\$	_	\$	_	\$	58					
Field operating costs ⁽¹⁾		4		—		—		—		4					
Interest expense, net ⁽²⁾				—		—		(3)		(3)					
Other income/(expense), net ⁽¹⁾				—		(7)				(7)					
Total gain/(loss) on derivatives recognized in net income	\$	60	\$	2	\$	(7)	\$	(3)	\$	52					

		Three Months Ended June 30, 2018														
Location of Gain/(Loss)	Commodity Derivatives			Foreign Currency Derivatives	Preferred Distribution Rate Reset Option			Interest Rate Derivatives		Total						
Supply and Logistics segment revenues ⁽¹⁾	\$	(339)	\$	(6)	\$	—	\$	_	\$	(345)						
Interest expense, net ⁽²⁾				—				(2)		(2)						
Other income/(expense), net ⁽¹⁾				—		8		—		8						
Total gain/(loss) on derivatives recognized in net income	\$	(339)	\$	(6)	\$	8	\$	(2)	\$	(339)						

	Six Months Ended June 30, 2019													
Location of Gain/(Loss)	 Commodity Derivatives	F	oreign Currency Derivatives	Γ	Preferred Distribution Rate Reset Option		Interest Rate Derivatives		Total					
Supply and Logistics segment revenues ⁽¹⁾	\$ 231	\$	7	\$	_	\$	—	\$	238					
Field operating costs ⁽¹⁾	11		—		—		—		11					
Interest expense, net ⁽²⁾	—		—		—		(5)		(5)					
Other income/(expense), net ⁽¹⁾	—		—		16		—		16					
Total gain/(loss) on derivatives recognized in net income	\$ 242	\$	7	\$	16	\$	(5)	\$	260					

	Six Months Ended June 30, 2018													
Location of Gain/(Loss)	Commodity Derivatives	F	oreign Currency Derivatives	Ι	Preferred Distribution Rate Reset Option		Interest Rate Derivatives		Total					
Supply and Logistics segment revenues ⁽¹⁾	\$ (384)	\$	(12)	\$	—	\$	_	\$	(396)					
Field operating costs ⁽¹⁾	1		—		—				1					
Interest expense, net ⁽²⁾	—		—		—		(1)		(1)					
Other income/(expense), net ⁽¹⁾	—		—		5		—		5					
Total gain/(loss) on derivatives recognized in net income	\$ (383)	\$	(12)	\$	5	\$	(1)	\$	(391)					

⁽¹⁾ Derivatives not designated as a hedge.

⁽²⁾ Derivatives in hedging relationships.

The following table summarizes the derivative assets and liabilities on our Condensed Consolidated Balance Sheet on a gross basis as of June 30, 2019 (in millions):

Derivatives Not Designated As Hedging Instruments												
Balance Sheet Location		Commodity Derivatives	F	oreign Currency Derivatives		Preferred istribution Rate Reset Option		Total	Interest Rate Derivatives ⁽¹⁾		Т	otal Derivatives
Derivative Assets	-											
Other current assets	\$	389	\$	4	\$		\$	393	\$	—	\$	393
Other long-term assets, net		37		—				37		—		37
Other current liabilities						_				—		_
Other long-term liabilities and deferred credits		6		_		_		6		_		6
Total Derivative Assets	\$	432	\$	4	\$	—	\$	436	\$		\$	436
Derivative Liabilities												
Other current assets	\$	(96)	\$	(1)	\$	—	\$	(97)	\$	—	\$	(97)
Other long-term assets, net		(4)		—		—		(4)		—		(4)
Other current liabilities		(8)		—		—		(8)		(43)		(51)
Other long-term liabilities and deferred credits		(15)		_		(20)		(35)		_		(35)
Total Derivative Liabilities	\$	(123)	\$	(1)	\$	(20)	\$	(144)	\$	(43)	\$	(187)

(1) Derivatives in hedging relationships.

The following table summarizes the derivative assets and liabilities on our Condensed Consolidated Balance Sheet on a gross basis as of December 31, 2018 (in millions):

Derivatives Not Designated As Hedging Instruments											
Balance Sheet Location		ommodity erivatives		Foreign Currency Derivatives		Preferred stribution Rate Reset Option	Total	Interest Rate Derivatives ⁽¹⁾		То	tal Derivatives
Derivative Assets											
Other current assets	\$	441	\$	—	\$		\$ 441	\$	2	\$	443
Other long-term assets, net		34		—			34		—		34
Other long-term liabilities and deferred credits		3		_			3		_		3
Total Derivative Assets	\$	478	\$	_	\$	_	\$ 478	\$	2	\$	480
Derivative Liabilities											
Other current assets	\$	(182)	\$	_	\$	_	\$ (182)	\$	_	\$	(182)
Other long-term assets, net		(7)		—			(7)				(7)
Other current liabilities		(10)		(9)			(19)		(1)		(20)
Other long-term liabilities and deferred credits		(9)		_		(36)	(45)		(8)		(53)
Total Derivative Liabilities	\$	(208)	\$	(9)	\$	(36)	\$ (253)	\$	(9)	\$	(262)

(1) Derivatives in hedging relationships.

Our financial derivatives, used for hedging risk, are governed through ISDA master agreements and clearing brokerage agreements. These agreements include stipulations regarding the right of set off in the event that we or our counterparty default on performance obligations. If a default were to occur, both parties have the right to net amounts payable and receivable into a single net settlement between parties.

Our accounting policy is to offset derivative assets and liabilities executed with the same counterparty when a master netting arrangement exists. Accordingly, we also offset derivative assets and liabilities with amounts associated with cash margin. Our exchange-traded derivatives are transacted through clearing brokerage accounts and are subject to margin requirements as established by the respective exchange. On a daily basis, our account equity (consisting of the sum of our cash balance and the fair value of our open derivatives) is compared to our initial margin requirement resulting in the payment or return of variation margin. The following table provides the components of our net broker receivable/(payable):

	ine 30, 2019	Dec	ember 31, 2018
Initial margin	\$ 71	\$	95
Variation margin returned	(85)		(91)
Letters of credit	 (59)	_	(84)
Net broker payable	\$ (73)	\$	(80)

The following table presents information about derivative financial assets and liabilities that are subject to offsetting, including enforceable master netting arrangements (in millions):

	June	: 30, 2	2019		Decem	ember 31, 2018			
	erivative et Positions		Derivative Liability Positions	Derivative Asset Positions		I	Derivative Liability Positions		
Netting Adjustments:	 								
Gross position - asset/(liability)	\$ 436	\$	(187)	\$	480	\$	(262)		
Netting adjustment	(107)		107		(192)		192		
Cash collateral received	(73)		—		(80)		_		
Net position - asset/(liability)	\$ 256	\$	(80)	\$	208	\$	(70)		
Balance Sheet Location After Netting Adjustments:									
Other current assets	\$ 223	\$	_	\$	181	\$	_		
Other long-term assets, net	33		_		27				
Other current liabilities	—		(51)		_		(20)		
Other long-term liabilities and deferred credits			(29)		_		(50)		
	\$ 256	\$	(80)	\$	208	\$	(70)		

As of June 30, 2019, there was a net loss of \$230 million deferred in AOCI. The deferred net loss recorded in AOCI is expected to be reclassified to future earnings contemporaneously with (i) the earnings recognition of the underlying hedged commodity transactions or (ii) interest expense accruals associated with underlying debt instruments. Of the total net loss deferred in AOCI at June 30, 2019, we expect to reclassify a net loss of \$8 million to earnings in the next twelve months. We estimate that substantially all of the remaining deferred loss will be reclassified to earnings through 2050 as the underlying hedged transactions impact earnings. A portion of these amounts is based on market prices as of June 30, 2019; thus, actual amounts to be reclassified will differ and could vary materially as a result of changes in market conditions.

The following table summarizes the net unrealized gain/(loss) recognized in AOCI for derivatives (in millions):

	 Three Mor Jun	nths H e 30,	Ended		Six Months Ended June 30,			
	2019 2018				2019	2018		
Interest rate derivatives, net	\$ \$ (35)		13		\$ (58)	\$	45	

At June 30, 2019 and December 31, 2018, none of our outstanding derivatives contained credit-risk related contingent features that would result in a material adverse impact to us upon any change in PAA's credit ratings. Although we may be required to post margin on our cleared derivatives as described above, we do not require our non-cleared derivative counterparties to post collateral with us.

Recurring Fair Value Measurements

Derivative Financial Assets and Liabilities

The following table sets forth by level within the fair value hierarchy our financial assets and liabilities that were accounted for at fair value on a recurring basis (in millions):

	Fair Value as of June 30, 2019								Fair Value as of December 31, 2018								
Recurring Fair Value Measures (1)	L	evel 1	Le	evel 2	L	evel 3		Total	L	evel 1	Le	evel 2	\mathbf{L}	evel 3		Total	
Commodity derivatives	\$	235	\$	80	\$	(6)	\$	309	\$	171	\$	87	\$	12	\$	270	
Interest rate derivatives		—		(43)		—		(43)				(7)		—		(7)	
Foreign currency derivatives		—		3		—		3				(9)		—		(9)	
Preferred Distribution Rate Reset Option		_		—		(20)		(20)				—		(36)		(36)	
Total net derivative asset/(liability)	\$	235	\$	40	\$	(26)	\$	249	\$	171	\$	71	\$	(24)	\$	218	

⁽¹⁾ Derivative assets and liabilities are presented above on a net basis but do not include related cash margin deposits.

Level 1

Level 1 of the fair value hierarchy includes exchange-traded commodity derivatives and over-the-counter commodity contracts such as futures and swaps. The fair value of exchange-traded commodity derivatives and over-the-counter commodity contracts is based on unadjusted quoted prices in active markets.

Level 2

Level 2 of the fair value hierarchy includes exchange-cleared commodity derivatives and over-the-counter commodity, interest rate and foreign currency derivatives that are traded in observable markets with less volume and transaction frequency than active markets. In addition, it includes certain physical commodity contracts. The fair values of these derivatives are corroborated with market observable inputs.

Level 3

Level 3 of the fair value hierarchy includes certain physical commodity contracts, over-the-counter options and the Preferred Distribution Rate Reset Option contained in PAA's partnership agreement which is classified as an embedded derivative.

The fair values of our Level 3 physical commodity contracts and over-the-counter options are based on valuation models utilizing significant timing estimates, which involve management judgment, and pricing inputs from observable and unobservable markets with less volume and transaction frequency than active markets. Significant deviations from these estimates and inputs could result in a material change in fair value. We report unrealized gains and losses associated with these physical commodity contracts in our Condensed Consolidated Statements of Operations as Supply and Logistics segment revenues.

The fair value of the embedded derivative feature contained in PAA's partnership agreement is based on a valuation model that estimates the fair value of the PAA Series A preferred units with and without the Preferred Distribution Rate Reset Option. This model contains inputs, including PAA's common unit price, ten-year U.S. Treasury rates, default probabilities and timing estimates, some of which involve management judgment. A significant change in these inputs could result in a material change in fair value to this embedded derivative feature. We report unrealized gains and losses associated with this embedded derivative in our Condensed Consolidated Statements of Operations in "Other income/(expense), net."

To the extent any transfers between levels of the fair value hierarchy occur, our policy is to reflect these transfers as of the beginning of the reporting period in which they occur.

Rollforward of Level 3 Net Asset/(Liability)

The following table provides a reconciliation of changes in fair value of the beginning and ending balances for our derivatives classified as Level 3 (in millions):

	Three Months Ended June 30,					Six Months Ended June 30,				
		2019		2018		2019		2018		
Beginning Balance	\$	(10)	\$	(26)	\$	(24)	\$	(30)		
Net gains/(losses) for the period included in earnings		(5)		7		18		5		
Settlements		(3)		1		(11)		7		
Derivatives entered into during the period		(8)		_		(9)		_		
Ending Balance	\$	(26)	\$	(18)	\$	(26)	\$	(18)		
Change in unrealized gains/(losses) included in earnings relating to Level 3 derivatives still held at the end of the period	\$	(13)	\$	7	\$	9	\$	5		

Note 11—Leases

Lessee

We evaluate all agreements entered into or modified after the date of adoption of Topic 842 that convey to us the use of property or equipment for a term to determine whether the agreement is or contains a lease. We lease certain property and equipment under noncancelable and cancelable operating and finance leases. Our operating leases primarily relate to railcars, office space, land, vehicles, and storage tanks, and our finance leases primarily relate to tractor trailers, vehicles and land. For leases with an initial term of greater than 12 months, we recognize a right-of-use asset and lease liability on the balance sheet. Leases with an initial term of 12 months or less are not recorded on the balance sheet. Our lease agreements have remaining lease terms ranging from one year to approximately 60 years. When applicable, this range includes additional terms associated with leases for which we are reasonably certain to exercise the option to renew and such renewal options are recognized as part of our right-of-use assets and lease liabilities. We have renewal options for leases with terms ranging from one year to 40 years that are not recognized as part of our right-of-use assets or lease liabilities as we have determined we are not reasonably certain to exercise the option to renew.

Certain of our leases have variable lease payments, many of which are based on changes in market indices such as the Consumer Price Index. Our lease agreements for our tractor trailers contain residual value guarantees equal to the fair market value of the tractor trailers at the end of the lease term in the event that we elect not to purchase the asset for an amount equal to the fair value. Our lease agreements do not contain any material restrictive covenants.

For determining the present value of lease payments, we use the discount rate implicit in the lease when readily determinable; however, such rate is not readily determinable for most of our leases. For those leases for which the discount rate is not readily determinable, we utilize incremental borrowing rates that reflect collateralized borrowing with payments and terms that mirror our lease portfolio to discount the lease payments based on information available at the lease commencement date.

The following table presents components of lease cost, including both amounts recognized in income and amounts capitalized (in millions):

Lease Cost	Three Months E June 30, 201		hs Ended 0, 2019
Operating lease cost	\$	31	\$ 63
Short-term lease cost		12	20
Other ⁽¹⁾			1
Total lease cost	\$	43	\$ 84

(1)

Includes immaterial finance lease costs, variable lease costs and sublease income.

The following table presents information related to cash flows arising from lease transactions (in millions):

	nths Ended 30, 2019
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows for operating leases	\$ 67
Financing cash flows for finance leases	\$ 7
Right-of-use assets obtained in exchange for new lease liabilities:	
Operating leases	\$ 10

Information related to the weighted-average remaining lease term and discount rate is presented in the table below:

	June 30, 2019
Weighted-average remaining lease term (in years):	
Operating leases	10.0
Finance leases	3.4
Weighted-average discount rate:	
Operating leases	4.5%
Finance leases	2.2%

The following table presents the amount and location of our operating and finance lease right-of-use assets and liabilities on our Condensed Consolidated Balance Sheet (in millions):

Leases	Balance Sheet Location	June	30, 2019
Assets			
Operating lease right-of-use assets	Long-term operating lease right-of-use assets, net	\$	469
Finance lease right-of-use assets	Property and equipment	\$	105
	Accumulated depreciation		(14)
	Property and equipment, net	\$	91
Total lease right-of-use assets		\$	560
Liabilities			
Operating lease liabilities			
Current	Other current liabilities	\$	104
Noncurrent	Long-term operating lease liabilities		370
Total operating lease liabilities		\$	474
Finance lease liabilities			
Current	Short-term debt	\$	19
Noncurrent	Other long-term debt, net		32
Total finance lease liabilities		\$	51
Total lease liabilities		\$	525

The following table presents the maturity of undiscounted cash flows for future minimum lease payments under noncancelable leases as of June 30, 2019 reconciled to our lease liabilities on our Condensed Consolidated Balance Sheet (amounts in millions):

	Operating	Finance
Future minimum lease payments ⁽¹⁾ :		
Remainder of 2019	\$ 62	\$ 10
2020	111	16
2021	92	7
2022	78	8
2023	54	5
Thereafter	247	8
Total	 644	 54
Less: Present value discount	(170)	(3)
Lease liabilities	\$ 474	\$ 51

(1)

Excludes future minimum payments for short-term and other immaterial leases not included on our Condensed Consolidated Balance Sheet.

Lessor

We evaluate all agreements entered into or modified after the date of adoption of Topic 842 that convey to others the use of property or equipment for a term to determine whether the agreement is or contains a lease. Significant judgment is required when determining whether a customer obtains the right to direct the use of identified property or equipment. The underlying assets associated with these agreements are evaluated for future use beyond the lease term.

Our Facilities and Transportation segments enter into agreements to conduct fee-based activities associated with (i) providing storage services primarily for crude oil, NGL and natural gas and (ii) transporting crude oil and NGL. Certain of these agreements convey counterparties the right to direct the operation of physically distinct assets. Such agreements include (i) fixed consideration, which is measured based on an available capacity during the period multiplied by the rate in the agreement, or (ii) a fixed monthly fee and variable consideration based on usage. These agreements often include options to extend or terminate the lease, with advance notice. These agreements are operating leases under Topic 842. For the three and six months ended June 30, 2019, our lease revenue was not material.

The table below presents the maturity of lease payments for operating lease agreements in effect as of June 30, 2019. This presentation includes minimum fixed lease payments and does not include an estimate of variable lease consideration. These agreements have remaining lease terms ranging from two years to 23 years. The following table presents the undiscounted cash flows expected to be received related to these agreements (in millions):

	Remainder of 2019		:	2020	2021	2022	2023	Thereafter
Lease revenue	\$	9	\$	19	\$ 22	\$ 25	\$ 21	\$ 226

Note 12—Related Party Transactions

See Note 16 to our Consolidated Financial Statements included in Part IV of our 2018 Annual Report on Form 10-K for a complete discussion of our related party transactions.

PAA's Ownership of our Class C Shares

As of June 30, 2019 and December 31, 2018, PAA owned 530,053,993 and 516,938,280, respectively, Class C shares. The Class C shares represent a non-economic limited partner interest in us that provides PAA, as the sole holder, a "pass-through" voting right through which PAA's common unitholders and Series A preferred unitholders have the effective right to vote, pro rata with the holders of our Class A and Class B shares, for the election of eligible directors.

Transactions with Other Related Parties

Our other related parties include (i) principal owners and their affiliated entities and (ii) entities in which we hold investments and account for under the equity method of accounting (see Note 7 for additional information regarding such entities). We recognize as our principal owners entities that have a designated representative on the board of directors of our general partner and/or own greater than 10% of the limited partner interests in AAP. Such limited partner interests in AAP translates into a significantly smaller indirect ownership interest in PAA. As of June 30, 2019, our principal owners include Oxy and Kayne Anderson Capital Advisors, L.P. We also consider subsidiaries or funds identified as affiliated with such entities to be related parties. Through various transactions by EMG in May 2019, EMG's limited partner interest in AAP was significantly reduced, which caused EMG to lose its right to designate a representative on the board of directors of our general partner. Following these transactions, we no longer recognize EMG as a principal owner.

During the three and six months ended June 30, 2019 and 2018, we recognized sales and transportation revenues, purchased petroleum products and utilized transportation services from our principal owners and their affiliated entities and our equity method investees. These transactions were conducted at posted tariff rates or prices that we believe approximate market. Included in these transactions was a crude oil buy/sell agreement that includes a multi-year minimum volume commitment. The impact to our Condensed Consolidated Statements of Operations from these transactions is included below (in millions):

	Three Months Ended June 30,						Ionths Ended June 30,				
		2019		2018		2019		2018			
Revenues from related parties ^{(1) (2)}	\$	231	\$	284	\$	456	\$	566			
Purchases and related costs from related parties ⁽²⁾	\$	(14)	\$	68	\$	100	\$	160			

⁽¹⁾ A majority of these revenues are included in "Supply and Logistics segment revenues" on our Condensed Consolidated Statements of Operations.

⁽²⁾ Crude oil purchases that are part of inventory exchanges under buy/sell transactions are netted with the related sales, with any margin presented in "Purchases and related costs" in our Condensed Consolidated Statements of Operations.

Our receivable and payable amounts with these related parties as reflected on our Condensed Consolidated Balance Sheets were as follows (in millions):

	June 30, 2019			
Trade accounts receivable and other receivables, net from related parties ^{(1) (2)}	\$ 285	\$	144	
Trade accounts payable to related parties ^{(1) (2) (3)}	\$ 80	\$	121	

⁽¹⁾ We have a netting arrangement with certain related parties. Receivables and payables are presented net of such amounts.

⁽²⁾ Includes amounts related to crude oil purchases and sales, transportation services and amounts owed to us or advanced to us related to expansion projects of equity method investees where we serve as construction manager.

⁽³⁾ We have an agreement to transport crude oil at posted tariff rates 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.

Note 13—Commitments and Contingencies

Loss Contingencies — General

To the extent we are able to assess the likelihood of a negative outcome for a contingency, our assessments of such likelihood range from remote to probable. If we determine that a negative outcome is probable and the amount of loss is reasonably estimable, we accrue an undiscounted liability equal to the estimated amount. If a range of probable loss amounts can be reasonably estimated and no amount within the range is a better estimate than any other amount, then we accrue an undiscounted liability equal to the minimum amount in the range. In addition, we estimate legal fees that we expect to incur associated with loss contingencies and accrue those costs when they are material and probable of being incurred.

We do not record a contingent liability when the likelihood of loss is probable but the amount cannot be reasonably estimated or when the likelihood of loss is believed to be only reasonably possible or remote. For contingencies where an unfavorable outcome is reasonably possible and the impact would be material to our consolidated financial statements, we disclose the nature of the contingency and, where feasible, an estimate of the possible loss or range of loss.

Legal Proceedings — General

In the ordinary course of business, we are involved in various legal proceedings, including those arising from regulatory and environmental matters. Although we are insured against various risks to the extent we believe it is prudent, there is no assurance that the nature and amount of such insurance will be adequate, in every case, to fully protect us from losses arising from current or future legal proceedings.

Taking into account what we believe to be all relevant known facts and circumstances, and based on what we believe to be reasonable assumptions regarding the application of those facts and circumstances to existing laws and regulations, we do not believe that the outcome of the legal proceedings in which we are currently involved (including those described below) will, individually or in the aggregate, have a material adverse effect on our consolidated financial condition, results of operations or cash flows.

Environmental — General

Although over the course of the last several years we have made significant investments in our maintenance and integrity programs, and have hired additional personnel in those areas, we have experienced (and likely will experience future) releases of hydrocarbon products into the environment from our pipeline, rail, storage and other facility operations. These releases can result from accidents or from unpredictable man-made or natural forces and may reach surface water bodies, groundwater aquifers or other sensitive environments. Damages and liabilities associated with any such releases from our existing or future assets could be significant and could have a material adverse effect on our consolidated financial condition, results of operations or cash flows.

We record environmental liabilities when environmental assessments and/or remedial efforts are probable and the amounts can be reasonably estimated. Generally, our recording of these accruals coincides with our completion of a feasibility study or our commitment to a formal plan of action. We do not discount our environmental remediation liabilities to present value. We also record environmental liabilities assumed in business combinations based on the estimated fair value of the environmental obligations caused by past operations of the acquired company. We record receivables for amounts recoverable from insurance or from third parties under indemnification agreements in the period that we determine the costs are probable of recovery.

Environmental expenditures that pertain to current operations or to future revenues are expensed or capitalized consistent with our capitalization policy for property and equipment. Expenditures that result from the remediation of an existing condition caused by past operations and that do not contribute to current or future profitability are expensed.

At June 30, 2019, our estimated undiscounted reserve for environmental liabilities (including liabilities related to the Line 901 incident, as discussed further below) totaled \$143 million, of which \$64 million was classified as short-term and \$79 million was classified as long-term. At December 31, 2018, our estimated undiscounted reserve for environmental liabilities (including liabilities related to the Line 901 incident) totaled \$135 million, of which \$43 million was classified as short-term and \$92 million was classified as long-term. Such short- and long-term environmental liabilities are reflected in "Other current liabilities" and "Other long-term liabilities and deferred credits," respectively, on our Condensed Consolidated Balance Sheets. At June 30, 2019, we had recorded receivables totaling \$74 million for amounts probable of recovery under insurance and from third parties under indemnification agreements, of which \$43 million was classified as short-term and \$31 million was classified as long-term. At December 31, 2018, we had recorded \$61 million of such receivables, of which \$28 million was classified as short-term and \$33 million was classified as long-term. Such short- and long-term receivables are reflected in "Trade accounts receivable and other receivables, net" and "Other long-term assets, net," respectively, on our Condensed Consolidated Balance Sheets.

In some cases, the actual cash expenditures associated with these liabilities may not occur for three years or longer. Our estimates used in determining these reserves are based on information currently available to us 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 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 and the possibility of existing or future legal claims giving rise to additional liabilities. Therefore, although we believe that the reserve is adequate, actual costs incurred (which may ultimately include costs for contingencies that are currently not reasonably estimable or costs for contingencies where the likelihood of loss is currently believed to be only reasonably possible or remote) may be in excess of the reserve and may potentially have a material adverse effect on our consolidated financial condition, results of operations or cash flows.

Specific Legal, Environmental or Regulatory Matters

Line 901 Incident. In May 2015, we experienced a crude oil release from our Las Flores to Gaviota Pipeline (Line 901) in Santa Barbara County, California. A portion of the released crude oil reached the Pacific Ocean at Refugio State Beach through a drainage culvert. Following the release, we shut down the pipeline and initiated our emergency response plan. A Unified Command, which included the United States Coast Guard, the EPA, the California Office of Spill Prevention and Response and the Santa Barbara Office of Emergency Management, was established for the response effort. Clean-up and remediation operations with respect to impacted shoreline and other areas has been determined by the Unified Command to be complete, and the Unified Command has been dissolved. Our estimate of the amount of oil spilled, based on relevant facts, data and information, is approximately 2,934 barrels; of this amount, we estimate that 598 barrels reached the Pacific Ocean.

As a result of the Line 901 incident, several governmental agencies and regulators initiated investigations into the Line 901 incident, various claims have been made against us and a number of lawsuits have been filed against us. We may be subject to additional claims, investigations and lawsuits, which could materially impact the liabilities and costs we currently expect to incur as a result of the Line 901 incident. Set forth below is a brief summary of actions and matters that are currently pending:

On May 21, 2015, we received a corrective action order from the United States Department of Transportation's Pipeline and Hazardous Materials Safety Administration ("PHMSA"), the governmental agency with jurisdiction over the operation of Line 901 as well as over a second stretch of pipeline extending from Gaviota Pump Station in Santa Barbara County to Emidio Pump Station in Kern County, California (Line 903), requiring us to shut down, purge, review, remediate and test Line 901. The corrective action order was subsequently amended on June 3, 2015; November 13, 2015; and June 16, 2016 to require us to take additional corrective actions with respect to both Lines 901 and 903 (as amended, the "CAO"). Among other requirements, the CAO obligated us to conduct a root cause failure analysis with respect to Line 901 and present remedial work plans and restart plans to PHMSA prior to returning Line 901 and 903 to service; the CAO also imposed a pressure restriction on the section of Line 903 between Pentland Pump Station and Emidio Pump Station and required us to take other specified actions with respect to both Lines 901 and 903. We intend to continue to comply with the CAO and to cooperate with any other governmental investigations relating to or arising out of the release. Excavation and removal of the affected section of the pipeline was completed on May 28, 2015. Line 901 and Line 903 have been purged and are not currently operational, with the exception of the Pentland to Emidio segment of Line 903, which remains in service under a pressure restriction. No timeline has been established for the restart of Line 901 or Line 903.

On February 17, 2016, PHMSA issued a Preliminary Factual Report of the Line 901 failure, which contains PHMSA's preliminary findings regarding factual information about the events leading up to the accident and the technical analysis that has been conducted to date. On May 19, 2016, PHMSA issued its final Failure Investigation Report regarding the Line 901 incident. PHMSA's findings indicate that the direct cause of the Line 901 incident was external corrosion that thinned the pipe wall to a level where it ruptured suddenly and released crude oil. PHMSA also concluded that there were numerous contributory causes of the Line 901 incident, including ineffective protection against external corrosion, failure to detect and mitigate the corrosion and a lack of timely detection and response to the rupture. The report also included copies of various engineering and technical reports regarding the incident. By virtue of its statutory authority, PHMSA has the power and authority to impose fines and penalties on us and cause civil or criminal charges to be brought against us. While to date PHMSA has not imposed any such fines or penalties or brought any such civil or criminal charges with respect to the Line 901 release, their investigation is still open and we are likely to have fines or penalties imposed upon us, and we may have civil or criminal charges brought against us, in the future.

In late May of 2015, the California Attorney General's Office and the District Attorney's office for the County of Santa Barbara (collectively, the "Prosecutors") began investigating the Line 901 incident to determine whether any applicable state or local laws had been violated. On May 16, 2016, PAA and one of its employees were charged by a California state grand jury, pursuant to an indictment filed in California Superior Court, Santa Barbara County (the "May 2016 Indictment"), with alleged violations of California law in connection with the Line 901 incident. The May 2016 Indictment included a total of 46 counts against PAA. On July 28, 2016, at an arraignment hearing held in California Superior Court in Santa Barbara County, PAA pled not guilty to all counts. Between May of 2016 and May of 2018, 31 of the criminal charges against PAA (including one felony charge) and all of the criminal charges against our employee, were dismissed. The remaining 15 charges were the subject of a jury trial in California Superior Court in Santa Barbara County that began in May of 2018. The jury returned a verdict on September 7, 2018, pursuant to which we were (i) found guilty on one felony discharge count and eight misdemeanor counts (which included one reporting count, one strict liability discharge count and six strict liability animal takings counts) and (ii) found not guilty on one strict liability animal takings count. The jury deadlocked on three counts (including two felony discharge counts and one strict liability animal takings count), and two misdemeanor discharge counts were dropped. On April 25, 2019, PAA was sentenced to pay fines and penalties in the aggregate amount of just under \$3.35 million for the convictions covered by the September 2018 jury verdict (the "2019 Sentence"). The fines and penalties imposed in connection with the 2019 Sentence have been paid. The Superior Court also indicated that it would conduct further hearings on the issue of whether there were any "direct victims" of the spill that are entitled to restitution under applicable law. We do not anticipate that the victim restitution, if any, imposed as a result of these proceedings will have a material adverse impact on the financial position or operations of the Partnership. In April of 2019, the Prosecutors announced their intent to re-try the two felony discharge counts for which no jury verdict was returned. The strict liability animal taking count for which no jury verdict was returned has been dismissed. We do not believe that a conviction on either or both counts can result in the imposition of any additional fines, penalties, or other punishment, under the California penal code. As such, we have filed a motion to vacate the trial.

Also in late May of 2015, the United States Attorney for the Department of Justice, Central District of California, Environmental Crimes Section ("DOJ") began an investigation into whether there were any violations of federal criminal statutes in connection with the Line 901 incident, including potential violations of the federal Clean Water Act. We have cooperated with the DOJ's investigation by responding to their requests for documents and access to our employees. Consistent with the terms of our governing organizational documents, we are funding our employees' defense costs, including the costs of separate counsel engaged to represent such individuals. On August 26, 2015, we received a Request for Information from the EPA relating to Line 901. We have provided various responsive materials to date and we will continue to do so in the future in cooperation with the EPA. Except in connection with the May 2016 Indictment and the 2019 Sentence, to date no civil enforcement actions or criminal charges with respect to the Line 901 release have been brought against PAA or any of its affiliates, officers or employees by PHMSA, the DOJ, the EPA, the California Attorney General or the California Department of Fish and Wildlife, and no fines or penalties have been imposed by such governmental agencies; however, the investigations being conducted by such agencies are still open and we may have fines or penalties imposed upon us, our officers or our employees in the future, or civil actions or criminal charges brought against us, our officers or our employees in the future, whether by those or other governmental agencies.

Shortly following the Line 901 incident, we established a claims line and encouraged any parties that were damaged by the release to contact us to discuss their damage claims. We have received a number of claims through the claims line and we have been processing those claims and making payments as appropriate. In addition, we have also had nine class action lawsuits filed against us, six of which have been administratively consolidated into a single proceeding in the United States District Court for the Central District of California. In general, the plaintiffs are seeking to establish different classes of claimants that have allegedly been damaged by the release. To date, the court has certified three sub-classes of claimants and denied certification of the other proposed sub-class. On appeal, the Ninth Circuit Court of Appeals overturned the certification of the oil-industry sub-class, so the remaining sub-classes that have been certified include (i) commercial fishermen who landed fish in certain specified fishing blocks in the waters adjacent to Santa Barbara County or persons or businesses who resold commercial seafood landed in such areas; and (ii) beachfront property and easement owners whose properties were oiled. We are also defending a separate class action lawsuit proceeding in the United States District Court for the Central District of California brought on behalf of the Line 901 and Line 903 easement holders seeking injunctive relief as well as compensatory damages.

There were also two securities law class action lawsuits filed on behalf of certain purported investors in PAA and/or PAGP against PAA, PAGP and/or certain of their respective officers, directors and underwriters. Both of these lawsuits were consolidated into a single proceeding in the United States District Court for the Southern District of Texas. In general, these lawsuits alleged that the various defendants violated securities laws by misleading investors regarding the integrity of PAA's pipelines and related facilities through false and misleading statements, omission of material facts and concealing of the true

extent of the spill. The plaintiffs claimed unspecified damages as a result of the reduction in value of their investments in PAA and PAGP, which they attributed to the alleged wrongful acts of the defendants. PAA and PAGP, and the other defendants, denied the allegations in, and moved to dismiss these lawsuits. On March 29, 2017, the Court ruled in our favor dismissing all claims against all defendants. Plaintiffs refiled their complaint. On April 2, 2018, the Court dismissed all of the refiled claims against all defendants with prejudice. Plaintiffs appealed the dismissal, and on July 16, 2019 the Fifth Circuit Court of Appeals affirmed the dismissal. Consistent with and subject to the terms of our governing organizational documents (and to the extent applicable, insurance policies), we indemnified and funded the defense costs of our officers and directors in connection with this lawsuit; we also indemnified and funded the defense costs of the underwriting agreements we previously entered into with such underwriters.

In addition, four unitholder derivative lawsuits have been filed by certain purported investors in PAA against PAA, certain of its affiliates and certain officers and directors. One lawsuit was filed in State District Court in Harris County, Texas and subsequently dismissed by the Court. Two of these lawsuits were filed in the United States District Court for the Southern District of Texas and were administratively consolidated into one action and later dismissed on the basis that Plains Partnership agreements require that derivative suits be filed in Delaware Chancery Court. Following the order dismissing the Texas Federal Court suits, a new derivative suit brought by different plaintiffs was filed in Delaware Chancery Court and subsequently dismissed without prejudice. Plaintiffs amended and refiled their complaint on June 3, 2019. Consistent with and subject to the terms of our governing organizational documents (and to the extent applicable, insurance policies), we are indemnifying and funding the defense costs of our officers and directors in connection with these lawsuits.

We have also received several other individual lawsuits and complaints from companies, governmental agencies and individuals alleging damages arising out of the Line 901 incident. These lawsuits and claims generally seek compensatory and punitive damages, and in some cases permanent injunctive relief.

In addition to the foregoing, as the "responsible party" for the Line 901 incident we are liable for various costs and for certain natural resource damages under the Oil Pollution Act, and we also have exposure to the payment of additional fines, penalties and costs under other applicable federal, state and local laws, statutes and regulations. To the extent any such costs are reasonably estimable, we have included an estimate of such costs in the loss accrual described below.

Taking the foregoing into account, as of June 30, 2019, we estimate that the aggregate total costs we have incurred or will incur with respect to the Line 901 incident will be approximately \$380 million, which estimate includes actual and projected emergency response and clean-up costs, natural resource damage assessments and certain third party claims settlements, as well as estimates for fines, penalties and certain legal fees. We accrue such estimates of aggregate total costs to "Field operating costs" in our Condensed Consolidated Statements of Operations. This estimate considers our prior experience in environmental investigation and remediation matters and available data from, and in consultation with, our environmental and other specialists, as well as currently available facts and presently enacted laws and regulations. We have made assumptions for (i) the duration of the natural resource damage assessment process and the ultimate amount of damages determined, (ii) the resolution of certain third party claims and lawsuits, but excluding claims and lawsuits with respect to which losses are not probable and reasonably estimable, and excluding future claims and lawsuits, (iii) the determination and calculation of fines and penalties, but excluding fines and penalties that are not probable or reasonably estimable and (iv) the nature, extent and cost of legal services that will be required in connection with all lawsuits, claims and other matters requiring legal or expert advice associated with the Line 901 incident. Our estimate does not include any lost revenue associated with the shutdown of Line 901 or 903 and does not include any liabilities or costs that are not reasonably estimable at this time or that relate to contingencies where we currently regard the likelihood of loss as being only reasonably possible or remote. We believe we have accrued adequate amounts for all probable and reasonably estimable costs; however, this estimate is subject to uncertainties associated with the assumptions that we have made. For example, the amount of time it takes for us to resolve all of the current and future lawsuits, claims and investigations that relate to the Line 901 incident could turn out to be significantly longer than we have assumed, and as a result the costs we incur for legal services could be significantly higher than we have estimated. In addition, with respect to fines and penalties, the ultimate amount of any fines and penalties assessed against us depends on a wide variety of factors, many of which are not estimable at this time. Where fines and penalties are probable and estimable, we have included them in our estimate, although such estimates could turn out to be wrong. Accordingly, our assumptions and estimates may turn out to be inaccurate and our total costs could turn out to be materially higher; therefore, we can provide no assurance that we will not have to accrue significant additional costs in the future with respect to the Line 901 incident.

As of June 30, 2019, we had a remaining undiscounted gross liability of \$88 million related to this event, of which approximately \$55 million is presented in "Other current liabilities" on our Condensed Consolidated Balance Sheet, with the remainder presented in "Other long-term liabilities and deferred credits." We maintain insurance coverage, which is subject to

certain exclusions and deductibles, in the event of such environmental liabilities. Subject to such exclusions and deductibles, we believe that our coverage is adequate to cover the current estimated total emergency response and clean-up costs, claims settlement costs and remediation costs and we believe that this coverage is also adequate to cover any potential increase in the estimates for these costs that exceed the amounts currently identified. Through June 30, 2019, we had collected, subject to customary reservations, \$188 million out of the approximate \$255 million of release costs that we believe are probable of recovery from insurance carriers, net of deductibles. Therefore, as of June 30, 2019, we have recognized a receivable of approximately \$67 million for the portion of the release costs that we believe is probable of recovery from insurance, net of deductibles and amounts already collected. Of this amount, approximately \$38 million is recognized as a current asset in "Trade accounts receivable and other receivables, net" on our Condensed Consolidated Balance Sheet, with the remainder in "Other long-term assets, net." We have completed the required clean-up and remediation work as determined by the Unified Command and the Unified Command has been dissolved; however, we expect to make payments for additional costs associated with restoration of the impacted areas, as well as natural resource damage assessment and compensation, legal, professional and regulatory costs, in addition to fines and penalties, during future periods.

Note 14—Operating Segments

We manage our operations through three operating segments: Transportation, Facilities and Supply and Logistics. See Note 3 to our Consolidated Financial Statements included in Part IV of our 2018 Annual Report on Form 10-K for a summary of the types of products and services from which each segment derives its revenues. Our CODM (our Chief Executive Officer) evaluates segment performance based on measures including Segment Adjusted EBITDA (as defined below) and maintenance capital investment.

We define Segment Adjusted EBITDA as revenues and equity earnings in unconsolidated entities less (a) purchases and related costs, (b) field operating costs and (c) segment general and administrative expenses, plus our proportionate share of the depreciation and amortization expense of, and gains and losses on significant asset sales by, unconsolidated entities, and further adjusted for certain selected items including (i) gains and losses on derivative instruments that are related to underlying activities in another period (or the reversal of such adjustments from a prior period), gains and losses on derivatives that are related to investing activities (such as the purchase of linefill) and inventory valuation adjustments, as applicable, (ii) long-term inventory costing adjustments, (iii) charges for obligations that are expected to be settled with the issuance of equity instruments, (iv) amounts related to deficiencies associated with minimum volume commitments, net of the applicable amounts subsequently recognized into revenue and (v) other items that our CODM believes are integral to understanding our core segment operating performance. Segment Adjusted EBITDA excludes depreciation and amortization.

Maintenance capital consists of capital expenditures for the replacement and/or refurbishment of partially or fully depreciated assets in order to maintain the operating and/or earnings capacity of our existing assets.

The following tables reflect certain financial data for each segment (in millions):

Three Months Ended June 30, 2019	Tran	sportation	Facilities	Supply and Logistics	Intersegment Adjustment	Total
Revenues:						
External customers ⁽¹⁾	\$	316	\$ 151	\$ 7,914	\$ (128)	\$ 8,253
Intersegment ⁽²⁾		243	140	1	128	512
Total revenues of reportable segments	\$	559	\$ 291	\$ 7,915	\$ _	\$ 8,765
Equity earnings in unconsolidated entities	\$	83	\$ _	\$ _	 	\$ 83
Segment Adjusted EBITDA	\$	410	\$ 172	\$ 200		\$ 782
Maintenance capital	\$	39	\$ 30	\$ 3		\$ 72

Three Months Ended June 30, 2018	Tran	sportation	on Facilities			Supply and Logistics	Intersegment Adjustment	Total
Revenues:							 	
External customers ⁽¹⁾	\$	264	\$	147	\$	7,781	\$ (112)	\$ 8,080
Intersegment ⁽²⁾		211		137			112	460
Total revenues of reportable segments	\$	475	\$	284	\$	7,781	\$ —	\$ 8,540
Equity earnings in unconsolidated entities	\$	96	\$	_	\$	_		\$ 96
Segment Adjusted EBITDA	\$	360	\$	171	\$	(26)		\$ 505
Maintenance capital	\$	32	\$	26	\$	5		\$ 63

Six Months Ended June 30, 2019	Т	ransportation	Facilities			Supply and Logistics	Intersegment Adjustment	Total
Revenues:								
External customers ⁽¹⁾	\$	618	\$	307	\$	15,936	\$ (233)	\$ 16,628
Intersegment ⁽²⁾		497		282		2	233	1,014
Total revenues of reportable segments	\$	1,115	\$	589	\$	15,938	\$ _	\$ 17,642
Equity earnings in unconsolidated entities	\$	172	\$	_	\$	_		\$ 172
Segment Adjusted EBITDA	\$	809	\$	356	\$	478		\$ 1,643
Maintenance capital	\$	67	\$	46	\$	5		\$ 118

Six Months Ended June 30, 2018	Tra	nsportation	rtation Facilities			Supply and Logistics	Intersegment Adjustment	Total
Revenues:								
External customers ⁽¹⁾	\$	517	\$	288	\$	15,892	\$ (219)	\$ 16,478
Intersegment ⁽²⁾		412		288		1	219	920
Total revenues of reportable segments	\$	929	\$	576	\$	15,893	\$ _	\$ 17,398
Equity earnings in unconsolidated entities	\$	171	\$	_	\$	_		\$ 171
Segment Adjusted EBITDA	\$	695	\$	357	\$	45		\$ 1,097
Maintenance capital	\$	61	\$	41	\$	6		\$ 108

- (1) Transportation revenues from External customers include certain inventory exchanges with our customers where our Supply and Logistics segment has transacted the inventory exchange and serves as the shipper on our pipeline systems. See Note 3 to our Consolidated Financial Statements included in Part IV of our 2018 Annual Report on Form 10-K for a discussion of our related accounting policy. We have included an estimate of the revenues from these inventory exchanges in our Transportation segment revenues from External customers presented above and adjusted those revenues out such that Total revenues from External customers reconciles to our Condensed Consolidated Statements of Operations. This presentation is consistent with the information provided to our CODM.
- (2) Segment revenues include intersegment amounts that are eliminated in Purchases and related costs and Field operating costs in our Condensed Consolidated Statements of Operations. Intersegment activities are conducted at posted tariff rates where applicable, or otherwise at rates similar to those charged to third parties or rates that we believe approximate market at the time the agreement is executed or renegotiated.

Segment Adjusted EBITDA Reconciliation

The following table reconciles Segment Adjusted EBITDA to Net income attributable to PAGP (in millions):

	 Three Moi Jun	nths Ei e 30,	nded	 Six Mont Jun	ths Er e 30,	ıded
	2019		2018	2019		2018
Segment Adjusted EBITDA	\$ 782	\$	505	\$ 1,643	\$	1,097
Adjustments ⁽¹⁾ :						
Depreciation and amortization of unconsolidated entities ⁽²⁾	(14)		(14)	(27)		(29)
Gains/(losses) from derivative activities, net of inventory valuation adjustments ⁽³⁾	(44)		(240)	30		(216)
Long-term inventory costing adjustments ⁽⁴⁾	(25)		(5)	(4)		7
Deficiencies under minimum volume commitments, net ⁽⁵⁾	(1)		(3)	7		(13)
Equity-indexed compensation expense ⁽⁶⁾	(4)		(12)	(7)		(23)
Net gain/(loss) on foreign currency revaluation ⁽⁷⁾	(7)		2	(12)		(8)
Line 901 incident ⁽⁸⁾	(10)		—	(10)		—
Unallocated general and administrative expenses	(1)		(1)	(3)		(2)
Depreciation and amortization	(148)		(131)	(284)		(257)
Gains/(losses) on asset sales and asset impairments, net	4		81			81
Gain on investment in unconsolidated entities			—	267		—
Interest expense, net	(103)		(111)	(203)		(217)
Other income/(expense), net	(6)		11	18		10
Income before tax	 423		82	 1,415		430
Income tax (expense)/benefit	3		14	(75)		(61)
Net income	426		96	 1,340		369
Net income attributable to noncontrolling interests	(360)		(89)	(1,127)		(325)
Net income attributable to PAGP	\$ 66	\$	7	\$ 213	\$	44

⁽¹⁾ Represents adjustments utilized by our CODM in the evaluation of segment results.

⁽²⁾ Includes our proportionate share of the depreciation and amortization of, and gains and losses on significant asset sales by, unconsolidated entities.

⁽³⁾ We use derivative instruments for risk management purposes and our related processes include specific identification of hedging instruments to an underlying hedged transaction. Although we identify an underlying transaction for each derivative instrument we enter into, there may not be an accounting hedge relationship between the instrument and the underlying transaction. In the course of evaluating our results, we identify the earnings that were recognized during the period related to derivative instruments for which the identified underlying transaction does not occur in the current period and exclude the related gains and losses in determining Segment Adjusted EBITDA. In addition, we exclude

gains and losses on derivatives that are related to investing activities, such as the purchase of linefill. We also exclude the impact of corresponding inventory valuation adjustments, as applicable.

- ⁽⁴⁾ We carry crude oil and NGL inventory that is comprised of minimum working inventory requirements in third-party assets and other working inventory that is 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. Therefore, we classify this inventory as long-term on our balance sheet and do not hedge the inventory with derivative instruments (similar to linefill in our own assets). We exclude the impact of changes in the average cost of the long-term inventory (that result from fluctuations in market prices) and writedowns of such inventory that result from price declines from Segment Adjusted EBITDA.
- (5) We have certain agreements that require counterparties to deliver, transport or throughput a minimum volume over an agreed upon period. Substantially all of such agreements were entered into with counterparties to economically support the return on our capital expenditure necessary to construct the related asset. Some of these agreements include make-up rights if the minimum volume is not met. We record a receivable from the counterparty in the period that services are provided or when the transaction occurs, including amounts for deficiency obligations from counterparties associated with minimum volume commitments. If a counterparty has a make-up right associated with a deficiency volume is delivered or shipped, when the make-up right and subsequently recognize the revenue at the earlier of when the deficiency volume is delivered or shipped, when the make-up right expires or when it is determined that the counterparty's ability to utilize the make-up right is remote. We include the impact of amounts billed to counterparties for their deficiency obligation, net of applicable amounts subsequently recognized into revenue, as a selected item impacting comparability. Our CODM views the inclusion of the contractually committed revenues associated with that period as meaningful to Segment Adjusted EBITDA as the related asset has been constructed, is standing ready to provide the committed service and the fixed operating costs are included in the current period results.
- ⁽⁶⁾ Includes equity-indexed compensation expense associated with awards that will or may be settled in PAA common units.
- ⁽⁷⁾ Includes gains and losses realized on the settlement of foreign currency transactions as well as the revaluation of monetary assets and liabilities denominated in a foreign currency.
- ⁽⁸⁾ Includes costs recognized during the period related to the Line 901 incident that occurred in May 2015, net of amounts we believe are probable of recovery from insurance. See Note 13 for additional information regarding the Line 901 incident.

Note 15—Income Taxes

Canadian Provincial Taxes

All of our Canadian operations are conducted by entities that are treated as corporations for Canadian tax purposes (flow through for U.S. income tax purposes) and that are subject to Canadian federal and provincial taxes. During the second quarter of 2019, the Alberta government enacted legislation that reduces the Alberta provincial corporate income tax rate from 12% to 8% over the period from July 1, 2019 through January 1, 2022. As a result, at June 30, 2019, we recognized a reduction of our deferred income tax liability of approximately \$60 million and a corresponding deferred tax benefit.

EMG Exchange Right Exercise

As a result of the exchange of the ownership interest in AAP by EMG, we recognized a deferred tax asset. See Note 9 for additional information regarding this transaction. See Note 14 to our Consolidated Financial Statements included in Part IV of our 2018 Annual Report on Form 10-K for information regarding the recognition of deferred tax assets associated with Exchange Right exercises.

Item 2. 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 and should be read in conjunction with our historical Consolidated Financial Statements and accompanying notes and Management's Discussion and Analysis of Financial Condition and Results of Operations as presented in our 2018 Annual Report on Form 10-K. For more detailed information regarding the basis of presentation for the following financial information, see the Condensed Consolidated Financial Statements and related notes that are contained in Part I, Item 1 of this Quarterly Report on Form 10-Q.

Our discussion and analysis includes the following:

- Executive Summary
- Acquisitions and Capital Projects
- Results of Operations
- Liquidity and Capital Resources
- Off-Balance Sheet Arrangements
- Recent Accounting Pronouncements
- Critical Accounting Policies and Estimates
- Other Items
- Forward-Looking Statements

Executive Summary

Company Overview

We are a Delaware limited partnership formed on July 17, 2013 that has elected to be taxed as a corporation for United States federal income tax purposes. As of June 30, 2019, our sole cash-generating assets consisted of (i) a 100% managing member interest in Plains All American GP LLC ("GP LLC") that has also elected to be taxed as a corporation for United States federal income tax purposes and (ii) an approximate 63% limited partner interest in AAP through our direct ownership of approximately 165.8 million AAP units and indirect ownership of approximately 1.0 million AAP units through GP LLC. GP LLC is a Delaware limited liability company that also holds the non-economic general partner interest in AAP. AAP is a Delaware limited partner interest in PAA through its ownership of approximately 268.5 million PAA common units (approximately 34% of PAA's total outstanding common units and Series A preferred units combined). AAP is the sole member of PAA GP LLC ("PAA GP"), a Delaware limited liability company that directly holds the non-economic general partner interest in PAA.

PAA owns and operates midstream energy infrastructure and provides logistics services primarily for crude oil, NGL and natural gas. 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. PAA's operations are conducted directly and indirectly through its operating subsidiaries and are managed through three operating segments: Transportation, Facilities and Supply and Logistics. See "—Results of Operations —Analysis of Operating Segments" for further discussion.

Overview of Operating Results, Capital Investments and Other Significant Activities

During the first six months of 2019, we recognized net income of \$1.340 billion as compared to net income of \$369 million recognized during the first six months of 2018. The increase in net income over the comparative periods was driven by:

- Favorable results from our Supply and Logistics segment due to favorable crude oil differentials, primarily in the Permian Basin and Canada, higher NGL margins and more favorable impacts in the 2019 period from the mark-to-market of certain derivative instruments;
- Favorable results from our Transportation segment, primarily from our pipelines in the Permian Basin region, driven by higher volumes from increased production and our recently completed capital expansion projects; and
- A non-cash gain of \$267 million recognized in the current period related to a fair value adjustment resulting from the accounting for the contribution of our undivided joint interest in the Capline pipeline system for an equity interest in Capline Pipeline Company LLC; partially offset by
- Higher depreciation and amortization expense primarily due to additional depreciation expense associated with the completion of various capital expansion projects; and
- The unfavorable impact to the 2019 comparative period of a net gain on asset sales and asset impairments of \$81 million for six months ended June 30, 2018.

See further discussion of our operating results in the "—Results of Operations—Analysis of Operating Segments" and "—Other Income and Expenses" sections below.

We invested \$695 million in midstream infrastructure projects during the six months ended June 30, 2019, and we expect expansion capital for the full year of 2019 to be approximately \$1.5 billion, primarily related to projects under development in the Permian Basin. See the "—Acquisitions and Capital Projects" section below for additional information.

During 2019, we also announced the formation of several strategic joint ventures, including Wink to Webster Pipeline LLC, Red Oak Pipeline LLC and Red River Pipeline Company LLC. See Note 7 and Note 9 to our Condensed Consolidated Financial Statements for additional information.

We paid approximately \$579 million of cash distributions to our Class A shareholders and noncontrolling interests during the six months ended June 30, 2019. In July 2019, we declared a quarterly cash distribution of \$0.36 per Class A share to be paid on August 14, 2019. In the third quarter of 2019, we will pay aggregate cash distributions of approximately \$300 million to our Class A shareholders and noncontrolling interests.

PAA Leverage Reduction Plan Completion and Financial Policy Update

In August 2017, PAA announced that it was implementing an action plan to strengthen its balance sheet, reduce leverage, enhance its distribution coverage, minimize new issuances of common equity and position PAA for future distribution growth. The action plan ("PAA Leverage Reduction Plan"), which was endorsed by our Board, included PAA's intent to achieve certain objectives. During 2017 and 2018, PAA made meaningful progress in executing the PAA Leverage Reduction Plan and in April 2019, PAA announced its achievement of the remaining objectives. Concurrent with the completion of the PAA Leverage Reduction Plan, PAA completed a review of its approach to its capital allocation process, targeted leverage metrics and distribution management policies. As part of the April 2019 announcement, PAA provided several updates regarding its financial policy, including the following actions:

- Lowering PAA's targeted long-term debt to Adjusted EBITDA leverage ratio by 0.5x to a range of 3.0x to 3.5x;
- Establishing a long-term sustainable minimum annual PAA distribution coverage level of 130% underpinned by predominantly fee-based cash flows; and

• PAA's adoption of an annual cycle for setting the common unit distribution level and intention to increase common unit distributions in the future contingent on achieving and maintaining targeted leverage and coverage ratios and subject to an annual review process.

These actions reflect PAA's dedication to optimizing sustainable unitholder value while also preserving and enhancing PAA's financial flexibility, further reducing leverage and improving its credit profile, with an objective of achieving mid-BBB equivalent credit ratings over time. Consistent with those objectives, PAA announced that it intends to continue to focus on activities to enhance investment returns and reinforce capital discipline through asset optimization, joint ventures, potential divestitures and similar arrangements.

Acquisitions and Capital Projects

The following table summarizes our expenditures for acquisition capital, expansion capital and maintenance capital (in millions):

			d
2	019		2018
\$	47	\$	—
	695		832
	118		108
\$	860	\$	940
	2 \$ \$	Jun 2019 \$ 47 695 118	\$ 47 \$ 695 118

⁽¹⁾ 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) 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 and/or refurbishment 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.

Expansion Capital Projects

The following table summarizes our notable projects in progress during 2019 and the estimated cost for the year ending December 31, 2019 (in millions):

Projects	2019
Permian Basin Takeaway Pipeline Projects	\$ 570
Complementary Permian Basin Projects	485
Selected Facilities	105
Other Long-Haul Pipeline Projects	100
Other Projects	240
Total Projected 2019 Expansion Capital Expenditures ⁽¹⁾	\$ 1,500

(1) Amounts reflect our expectation that certain projects will be owned in a joint venture structure with a proportionate share of the project cost dispersed among the partners.

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 data):

	Three Mo Jun	nths e 30		 Va	riance	 Six Mon Jur	ths E 1e 30,		Variance			
	2019		2018	\$	%	2019		2018		\$	%	
Transportation Segment Adjusted EBITDA ⁽¹⁾	\$ 410	\$	360	\$ 50	14 %	\$ 809	\$	695	\$	114	16 %	
Facilities Segment Adjusted EBITDA (1)	172		171	1	1 %	356		357		(1)	—%	
Supply and Logistics Segment Adjusted EBITDA ⁽¹⁾	200		(26)	226	**	478		45		433	**	
Adjustments:												
Depreciation and amortization of unconsolidated entities	(14)		(14)	_	%	(27)		(29)		2	7 %	
Selected items impacting comparability - Segment Adjusted EBITDA	(91)		(258)	167	**	4		(253)		257	**	
Unallocated general and administrative expenses	(1)		(1)	_	— %	(3)		(2)		(1)	(50)%	
Depreciation and amortization	(148)		(131)	(17)	(13)%	(284)		(257)		(27)	(11)%	
Gains/(losses) on asset sales and asset impairments, net	4		81	(77)	(95)%			81		(81)	(100)%	
Gain on investment in unconsolidated entities	_			_	N/A	267		_		267	N/A	
Interest expense, net	(103)		(111)	8	7 %	(203)		(217)		14	6 %	
Other income/(expense), net	(6)		11	(17)	**	18		10		8	**	
Income tax (expense)/benefit	3		14	(11)	(79)%	(75)		(61)		(14)	(23)%	
Net income	 426		96	 330	344 %	1,340		369		971	263 %	
Net income attributable to noncontrolling interests	(360)		(89)	(271)	(304)%	(1,127)		(325)		(802)	(247)%	
Net income attributable to PAGP	\$ 66	\$	7	\$ 59	**	\$ 213	\$	44	\$	169	384 %	
Basic net income per Class A share	\$ 0.41	\$	0.05	\$ 0.36	**	\$ 1.32	\$	0.28	\$	1.04	371 %	
Diluted net income per Class A share	\$ 0.40	\$	0.05	\$ 0.35	**	\$ 1.32	\$	0.28	\$	1.04	371 %	
Basic weighted average Class A shares outstanding	162		157	5	3 %	161		157		4	3 %	
Diluted weighted average Class A shares outstanding	164		157	7	4 %	161		157		4	3 %	

** Indicates that variance as a percentage is not meaningful.

⁽¹⁾ Segment Adjusted EBITDA is the measure of segment performance that is utilized by our CODM to assess performance and allocate resources among our operating segments. This measure is adjusted for certain items, including those that our CODM believes impact comparability of results across periods. See Note 14 to our Condensed Consolidated Financial Statements for additional discussion of such adjustments.

Non-GAAP Financial Measures

To supplement our financial information presented in accordance with GAAP, management uses additional measures known as "non-GAAP financial measures" in its evaluation of past performance and prospects for the future. The primary additional measure used by management is earnings before interest, taxes, depreciation and amortization (including our proportionate share of depreciation and amortization of, and gains and losses on significant asset sales by, unconsolidated entities), gains and losses on asset sales and asset impairments and gains on investments in unconsolidated entities, adjusted for certain selected items impacting comparability ("Adjusted EBITDA").

Management believes that the presentation of such additional financial measure provides useful information to investors regarding our performance and results of operations because this measure, when used to supplement related GAAP financial measures, (i) provides additional information about our core operating performance, (ii) provides investors with the same financial analytical framework upon which management bases financial, operational, compensation and planning/budgeting decisions and (iii) presents measures that investors, rating agencies and debt holders have indicated are useful in assessing us and our results of operations. This non-GAAP measure may exclude, for example, (i) charges for obligations that are expected to be settled with the issuance of equity instruments, (ii) gains or losses on derivative instruments that are related to underlying activities in another period (or the reversal of such adjustments from a prior period), the mark-to-market related to PAA's Preferred Distribution Rate Reset Option, gains and losses on derivatives that are related to investing activities (such as the purchase of linefill) and inventory valuation adjustments, as applicable, (iii) long-term inventory costing adjustments, (iv) items that are not indicative of our core operating results and business outlook and/or (v) other items that we believe should be excluded in understanding our core operating performance. This measure may further be adjusted to include amounts related to deficiencies associated with minimum volume commitments whereby we have billed the counterparties for their deficiency obligation and such amounts are recognized as deferred revenue in "Other current liabilities" in our Condensed Consolidated Financial Statements. Such amounts are presented net of applicable amounts subsequently recognized into revenue. We have defined all such items as "selected items impacting comparability." We do not necessarily consider all of our selected items impacting comparability to be non-recurring, infrequent

Although we present selected items impacting comparability that management considers in evaluating our performance, you should also be aware that the items presented do not represent all items that affect comparability between the periods presented. Variations in our operating results are also caused by changes in volumes, prices, exchange rates, mechanical interruptions, acquisitions, expansion projects and numerous other factors as discussed, as applicable, in "Analysis of Operating Segments."

Our definition and calculation of certain non-GAAP financial measures may not be comparable to similarly-titled measures of other companies. Adjusted EBITDA is reconciled to Net Income, the most directly comparable measure as reported in accordance with GAAP, and should be viewed in addition to, and not in lieu of, our Condensed Consolidated Financial Statements and footnotes.

The following table sets forth the reconciliation of this non-GAAP financial performance measure from Net income (in millions):

]	Three Mo Jur	nths ne 30,	Ended	 Vai	riance	 Six Mont Jun	ths Ei e 30,	nded	 Vai	iance
	2	2019		2018	\$	%	 2019		2018	 \$	%
Net income	\$	426	\$	96	\$ 330	344 %	\$ 1,340	\$	369	\$ 971	263 %
Add/(Subtract):											
Interest expense, net		103		111	(8)	(7)%	203		217	(14)	(6)%
Income tax expense/(benefit)		(3)		(14)	11	79 %	75		61	14	23 %
Depreciation and amortization		148		131	17	13 %	284		257	27	11 %
(Gains)/losses on asset sales and asset impairments, net		(4)		(81)	77	95 %			(81)	81	100 %
Gain on investment in unconsolidated entities		_		_	_	N/A	(267)		_	(267)	N/A
Depreciation and amortization of unconsolidated entities ⁽¹⁾		14		14		—%	27		29	(2)	(7)%
Selected Items Impacting Comparability:											
(Gains)/losses from derivative activities, net of inventory valuation adjustments ⁽²⁾		44		240	(196)	**	(30)		216	(246)	**
Long-term inventory costing adjustments ⁽³⁾		25		5	20	**	4		(7)	11	**
Deficiencies under minimum volume commitments, net ⁽⁴⁾	2	1		3	(2)	**	(7)		13	(20)	**
Equity-indexed compensation expense ⁽⁵⁾		4		12	(8)	**	7		23	(16)	**
Net (gain)/loss on foreign currency revaluation ⁽⁶⁾		7		(2)	9	**	12		8	4	**
Line 901 incident ⁽⁷⁾		10			10	**	10			10	**
Selected Items Impacting Comparability - Segment Adjusted EBITDA		91		258	 (167)	**	(4)		253	(257)	**
(Gains)/losses from derivative activities ⁽²⁾		7		(8)	15	**	(15)		(5)	(10)	**
Net (gain)/loss on foreign currency revaluation ⁽⁶⁾		1		(2)	3	**			(4)	4	**
Selected Items Impacting Comparability - Adjusted EBITDA (8)		99		248	 (149)	**	 (19)		244	(263)	**
Adjusted EBITDA ⁽⁸⁾	\$	783	\$	505	\$ 278	55 %	\$ 1,643	\$	1,096	\$ 547	50 %

** Indicates that variance as a percentage is not meaningful.

⁽¹⁾ Over the past several years, we have increased our participation in strategic pipeline joint ventures accounted for under the equity method of accounting. We exclude our proportionate share of the depreciation and amortization expense of, and gains and losses on significant asset sales by, such unconsolidated entities when reviewing Adjusted EBITDA, similar to our consolidated assets.

⁽²⁾ We use derivative instruments for risk management purposes, and our related processes include specific identification of hedging instruments to an underlying hedged transaction. Although we identify an underlying transaction for each derivative instrument we enter into, there may not be an accounting hedge relationship between the instrument and the underlying transaction. In the course of evaluating our results of operations, we identify the earnings that were recognized during the period related to derivative instruments for which the identified underlying transaction does not occur in the current period and exclude the related gains and losses in determining Adjusted EBITDA. In addition, we

exclude gains and losses on derivatives that are related to investing activities, such as the purchase of linefill. We also exclude the impact of corresponding inventory valuation adjustments, as applicable, as well as the mark-to-market adjustment related to PAA's Preferred Distribution Rate Reset Option. See Note 10 to our Condensed Consolidated Financial Statements for a comprehensive discussion regarding our derivatives and risk management activities and PAA's Preferred Distribution Rate Reset Option.

- ⁽³⁾ We carry crude oil and NGL inventory that is comprised of minimum working inventory requirements in third-party assets and other working inventory that is 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. Therefore, we classify this inventory as long-term on our balance sheet and do not hedge the inventory with derivative instruments (similar to linefill in our own assets). We treat the impact of changes in the average cost of the long-term inventory (that result from fluctuations in market prices) and writedowns of such inventory that result from price declines as a selected item impacting comparability. See Note 5 to our Consolidated Financial Statements included in Part IV of our 2018 Annual Report on Form 10-K for additional inventory disclosures.
- (4) We have certain agreements that require counterparties to deliver, transport or throughput a minimum volume over an agreed upon period. Substantially all of such agreements were entered into with counterparties to economically support the return on our capital expenditure necessary to construct the related asset. Some of these agreements include make-up rights if the minimum volume is not met. We record a receivable from the counterparty in the period that services are provided or when the transaction occurs, including amounts for deficiency obligations from counterparties associated with minimum volume commitments. If a counterparty has a make-up right associated with a deficiency we defer the revenue attributable to the counterparty's make-up right and subsequently recognize the revenue at the earlier of when the deficiency volume is delivered or shipped, when the make-up right expires or when it is determined that the counterparty's ability to utilize the make-up right is remote. We include the impact of amounts billed to counterparties for their deficiency obligation, net of applicable amounts subsequently recognized into revenue, as a selected item impacting comparability. We believe the inclusion of the contractually committed revenues associated with that period is meaningful to investors as the related asset has been constructed, is standing ready to provide the committed service and the fixed operating costs are included in the current period results.
- ⁽⁵⁾ Our total equity-indexed compensation expense includes expense associated with awards that will or may be settled in PAA common units and awards that will or may be settled in cash. The awards that will or may be settled in PAA common units are included in PAA's diluted net income per unit calculation when the applicable performance criteria have been met. We consider the compensation expense associated with these awards as a selected item impacting comparability as the dilutive impact of the outstanding awards is included in PAA's diluted net income per unit calculation, as applicable, and the majority of the awards are expected to be settled in units. The portion of compensation expense associated with awards that are certain to be settled in cash is not considered a selected item impacting comparability. See Note 17 to our Consolidated Financial Statements included in Part IV of our 2018 Annual Report on Form 10-K for a comprehensive discussion regarding our equity-indexed compensation plans.
- ⁽⁶⁾ During the periods presented, there were fluctuations in the value of CAD to USD, resulting in non-cash gains and losses that were not related to our core operating results for the period and were thus classified as a selected item impacting comparability. See Note 10 to our Condensed Consolidated Financial Statements for discussion regarding our currency exchange rate risk hedging activities.
- (7) Includes costs recognized during the period related to the Line 901 incident that occurred in May 2015, net of amounts we believe are probable of recovery from insurance. See Note 13 to our Condensed Consolidated Financial Statements for additional information regarding the Line 901 incident.
- ⁽⁸⁾ Other income/(expense), net per our Condensed Consolidated Statements of Operations, adjusted for selected items impacting comparability ("Adjusted Other income/(expense), net") is included in Adjusted EBITDA and excluded from Segment Adjusted EBITDA.

Analysis of Operating Segments

We manage our operations through three operating segments: Transportation, Facilities and Supply and Logistics. Our CODM (our Chief Executive Officer) evaluates segment performance based on a variety of measures including Segment Adjusted EBITDA, segment volumes, Segment Adjusted EBITDA per barrel and maintenance capital investment.

We define Segment Adjusted EBITDA as revenues and equity earnings in unconsolidated entities less (a) purchases and related costs, (b) field operating costs and (c) segment general and administrative expenses, plus our proportionate share of the depreciation and amortization expense of, and gains and losses on significant asset sales by, unconsolidated entities, and further adjusted for certain selected items including (i) the mark-to-market of derivative instruments that are related to underlying activities in another period (or the reversal of such adjustments from a prior period), gains and losses on derivatives that are related to investing activities (such as the purchase of linefill) and inventory valuation adjustments, as applicable, (ii) long-term inventory costing adjustments, (iii) charges for obligations that are expected to be settled with the issuance of equity instruments, (iv) amounts related to deficiencies associated with minimum volume commitments, net of applicable amounts subsequently recognized into revenue and (v) other items that our CODM believes are integral to understanding our core segment operating performance. See Note 14 to our Condensed Consolidated Financial Statements for a reconciliation of Segment Adjusted EBITDA to Net income attributable to PAGP.

Revenues and expenses from our Canadian based subsidiaries, which use CAD as their functional currency, are translated at the prevailing average exchange rates for the 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, pipeline capacity agreements and other transportation fees. Tariffs and other fees on our pipeline systems vary by receipt point and delivery point. The segment results generated by our tariff and other fee-related activities depend 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.

The following tables set forth our operating results from our Transportation segment:

Operating Results (1)	 Three Mo Jun	nths ie 30,		 Var	riance	 Six Mon Jur	ths Ei 1e 30,	nded	 Va	Variance	
(in millions, except per barrel data)	2019		2018	\$	%	2019		2018	\$	%	
Revenues	\$ 559	\$	475	\$ 84	18 %	\$ 1,115	\$	929	\$ 186	20 %	
Purchases and related costs	(48)		(46)	(2)	(4)%	(100)		(92)	(8)	(9)%	
Field operating costs	(186)		(157)	(29)	(18)%	(360)		(304)	(56)	(18)%	
Segment general and administrative expenses ⁽²⁾	(27)		(30)	3	10 %	(54)		(58)	4	7 %	
Equity earnings in unconsolidated entities	83		96	(13)	(14)%	172		171	1	1 %	
Adjustments ⁽³⁾ :											
Depreciation and amortization of unconsolidated entities	14		14	_	—%	27		29	(2)	(7)%	
(Gains)/losses from derivative activities	2		_	2	N/A	2		(1)	3	**	
Deficiencies under minimum volume commitments, net	1		1		**	(7)		9	(16)	**	
Equity-indexed compensation expense	2		7	(5)	**	4		12	(8)	**	
Line 901 incident	10		—	10	**	10		—	10	**	
Segment Adjusted EBITDA	\$ 410	\$	360	\$ 50	14 %	\$ 809	\$	695	\$ 114	16 %	
Maintenance capital	\$ 39	\$	32	\$ 7	22 %	\$ 67	\$	61	\$ 6	10 %	
Segment Adjusted EBITDA per barrel	\$ 0.66	\$	0.68	\$ (0.02)	(3)%	\$ 0.67	\$	0.69	\$ (0.02)	(3)%	

Average Daily Volumes	Three Mont June		Varia	nce	Six Month June		Varia	nce
(in thousands of barrels per day) (4)	2019	2018	Volumes	%	2019	2018	Volumes	%
Tariff activities volumes								
Crude oil pipelines (by region):								
Permian Basin ⁽⁵⁾	4,575	3,734	841	23 %	4,423	3,489	934	27 %
South Texas / Eagle Ford ⁽⁵⁾	448	434	14	3 %	454	428	26	6 %
Central ⁽⁵⁾	525	448	77	17 %	517	445	72	16 %
Gulf Coast	147	170	(23)	(14)%	152	187	(35)	(19)%
Rocky Mountain ⁽⁵⁾	313	270	43	16 %	307	263	44	17 %
Western	195	181	14	8 %	188	177	11	6 %
Canada	319	298	21	7 %	321	308	13	4 %
Crude oil pipelines	6,522	5,535	987	18 %	6,362	5,297	1,065	20 %
NGL pipelines	182	171	11	6 %	196	172	24	14 %
Tariff activities total volumes	6,704	5,706	998	17 %	6,558	5,469	1,089	20 %
Trucking volumes	83	91	(8)	(9)%	88	95	(7)	(7)%
Transportation segment total volumes	6,787	5,797	990	17 %	6,646	5,564	1,082	19 %

** Indicates that variance as a percentage is not meaningful.

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

⁽²⁾ 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.

⁽³⁾ Represents adjustments included in the performance measure utilized by our CODM in the evaluation of segment results. See Note 14 to our Condensed Consolidated Financial Statements for additional discussion of such adjustments.

⁽⁴⁾ Average daily volumes are calculated as the total volumes (attributable to our interest) for the period divided by the number of days in the period.

⁽⁵⁾ Region includes volumes (attributable to our interest) from pipelines owned by unconsolidated entities.

The following is a discussion of items impacting Transportation segment operating results for the periods indicated.

Revenues, Purchases and Related Costs, Equity Earnings in Unconsolidated Entities and Volumes. The following table presents variances in revenues, purchases and related costs and equity earnings in unconsolidated entities by region for the comparative periods presented:

			Months	avorable) 5 Ended J 9-2018		Favorable/(Unfavorable) Variance Six Months Ended June 30, 2019-2018							
(in millions)	Rev	/enues	a	chases ind ed Costs	Equity Earnings	Re	venues	Purchases and Related Costs	I	Equity Earnings			
Permian Basin region	\$	54	\$	(1)	\$ (18)	\$	120	\$ (3)	\$	(30)			
South Texas / Eagle Ford region		(2)		—	3		(1)			24			
Central region		7		—	2		23	_		7			
Gulf Coast region		1		—	(6)		_	_		(10)			
Rocky Mountain region		(1)		—	5		(5)	_		9			
Canada region		9		—	—		13	_		_			
Other regions, trucking and pipeline loss allowance revenue		16		(1)	1		36	(5)		1			
Total variance	\$	84	\$	(2)	\$ (13)	\$	186	\$ (8)	\$	1			

Permian Basin region. The increase in revenues, net of purchases and related costs, of approximately \$53 million and \$117 million for the three and six months ended June 30, 2019, respectively, compared to the three and six months ended June 30, 2018 was primarily due to higher volumes from increased production and our recently completed capital expansion projects. These increases for the three and six month comparative periods included (i) higher volumes on our gathering systems of approximately 279,000 and 290,000 barrels per day, respectively, (ii) higher volumes of approximately 390,000 and 450,000 barrels per day, respectively, on our intra-basin pipelines and (iii) a volume increase of approximately 172,000 and 194,000, respectively, on our long-haul pipelines, including our Sunrise II pipeline, which was placed in service in the fourth quarter of 2018.

The decrease in equity earnings for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 was primarily due to the sale of a 30% interest in BridgeTex Pipeline Company, LLC in the third quarter of 2018.

- South Texas / Eagle Ford region. The increase in equity earnings for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 was from our 50% interest in Eagle Ford Pipeline LLC and was primarily due to higher volumes. The six month comparative period was also favorably impacted by the recognition of revenue associated with deficiencies under minimum volume commitments.
- *Central region.* The increase in revenues for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 was primarily due to higher volumes on certain of our pipelines in the Central region, including our Red River pipeline. Additionally, the six-month 2019 period was favorably impacted by the recognition of previously deferred revenue in the first quarter of 2019.

The increase in equity earnings for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 was primarily from our 50% interests in Diamond Pipeline LLC ("Diamond Pipeline"), Caddo Pipeline LLC and Midway Pipeline LLC and was due to higher volumes related to increased refinery demand. Subsequent to June 30, 2019, the owners of Diamond Pipeline sanctioned an expansion and an extension of the pipeline to connect to the Capline pipeline.

• *Gulf Coast region*. The decrease in volumes in the Gulf Coast region for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 were associated with (i) a lower tariff pipeline, which did not result in a significant impact on revenue and (ii) the Capline pipeline being taken out of service in the fourth quarter of 2018. Subsequent to June 30, 2019, the owners of Capline Pipeline Company LLC sanctioned the reversal of the Capline pipeline system and a connection to Diamond Pipeline.



In the first quarter of 2019, the owners of the Capline pipeline system contributed their undivided joint interests in the system for equity interests in a legal entity. As a result, revenues and expenses from the Capline pipeline system that were previously consolidated are reflected as equity earnings. The unfavorable equity earnings variance for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 was due to our share of operating costs from our 54.13% interest in Capline Pipeline Company LLC reflected in equity earnings in the 2019 periods, whereas such costs were reflected in field operating costs in the 2018 periods.

• *Rocky Mountain region*. The decrease in revenues for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 was primarily due to the sale of certain of our assets in the Rocky Mountain region in May of 2018.

The increase in equity earnings for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 was primarily from our 40% interest in Saddlehorn Pipeline Company, LLC and was due to higher volumes from committed shippers.

- *Canada region*. The increase in revenues for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 was primarily due to higher tariffs on certain of our Canadian crude oil pipelines and related system assets, partially offset by unfavorable foreign exchange impacts.
- Other regions, trucking and pipeline loss allowance revenue. The increase in other net revenues for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 was primarily due to greater loss allowance revenue in the 2019 periods driven by higher volumes.

Adjustments: Deficiencies under minimum volume commitments, net. Many industry infrastructure projects developed and completed over the last several years were underpinned by long-term minimum volume commitment contracts whereby the shipper agreed to either: (i) ship and pay for certain stated volumes or (ii) pay the agreed upon price for a minimum contract quantity. Some of these agreements include make-up rights if the minimum volume is not met. If a counterparty has a make-up right associated with a deficiency, we bill the counterparty and defer the revenue attributable to the counterparty's make-up right but record an adjustment to reflect such amount associated with the current period activity in Segment Adjusted EBITDA. We subsequently recognize the revenue, and record a corresponding reversal of the adjustment, at the earlier of when the deficiency volume is delivered or shipped, when the make-up right expires or when it is determined that the counterparty's ability to utilize the make-up right is remote.

For the three months ended June 30, 2019 and the three and six months ended June 30, 2018, amounts billed to counterparties exceeded revenue recognized during the period that was previously deferred. For the six months ended June 30, 2019, the recognition of previously deferred revenue exceeded amounts billed to counterparties associated with deficiencies under minimum volume commitments.

Field Operating Costs. The increase in field operating costs for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 was primarily due to (i) the impact of an increase of estimated costs recognized in the second quarter of 2019 associated with the Line 901 incident (which impact our field operating costs but are excluded from Segment Adjusted EBITDA and thus are reflected as an "Adjustment" in the table above) (see Note 13 to our Condensed Consolidated Financial Statements for additional information regarding the Line 901 incident), (ii) an increase in power related costs, resulting from higher volumes and (iii) an increase in property taxes related to new assets placed in service and (iv) an increase in performance-based compensation costs. Overall increases in field operating costs also resulted from expansion projects placed in service since June 30, 2018, including our Sunrise II pipeline expansion within the Permian Basin region, which was placed in service in late 2018. The increase in field operating costs for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 was partially offset by the favorable impact of reflecting operating costs associated with the Capline pipeline system in equity earnings for the 2019 periods that were included in field operating costs for the 2018 periods, as discussed above.

Segment general and administrative expenses. The decrease in segment general and administrative expenses for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 was primarily due to a decrease in equity-indexed compensation expense due to fewer awards outstanding in 2019. A portion of equity-indexed compensation expense was associated with awards that will or may be settled in common units (which impact our segment general and administrative expenses but are excluded from Segment Adjusted EBITDA and thus are reflected as an "Adjustment" in the table above).

Maintenance Capital. Maintenance capital consists of capital expenditures for the replacement and/or refurbishment of partially or fully depreciated assets in order to maintain the operating and/or earnings capacity of our existing assets. The increase in maintenance capital for the three and six months ended June 30, 2019 compared to the same periods in 2018 was primarily due to the timing of projects in our integrity management program.

Facilities Segment

Our Facilities segment operations generally consist of fee-based activities associated with providing storage, terminalling and throughput services primarily for crude oil, 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:

Operating Results (1)		Three Mo Jun	nths l ie 30,		Variance				Six Mon Jur	ths E 1e 30,		Variance			
(in millions, except per barrel data)		2019		2018		\$	%		2019		2018		\$	%	
Revenues	\$	291	\$	284	\$	7	2 %	\$	589	\$	576	\$	13	2 %	
Purchases and related costs		(4)		(3)		(1)	(33)%		(7)		(8)		1	13 %	
Field operating costs		(88)		(92)		4	4 %		(175)		(176)		1	1 %	
Segment general and administrative expenses ⁽²⁾		(21)		(21)		_	— %		(41)		(42)		1	2 %	
Adjustments ⁽³⁾ :				(1)			**		(11)					**	
Gains from derivative activities		(7)		(1)		(6)	T T		(11)		(2)		(9)	ጥጥ	
Deficiencies under minimum volume commitments, net		_		2		(2)	**		_		4		(4)	**	
Equity-indexed compensation expense		1		2		(1)	**		1		5		(4)	**	
Segment Adjusted EBITDA		172	\$	171	\$	1	1 %	\$	356	\$	357	\$	(1)	—%	
Maintenance capital	\$	30	\$	26	\$	4	15 %	\$	46	\$	41	\$	5	12 %	
Segment Adjusted EBITDA per barrel	\$	0.46	\$	0.46	\$		%	\$	0.48	\$	0.48	\$		%	

	Three Mon June		Var	iance		ths Ended e 30,	Variance			
Volumes (4)	2019	2018	Volumes	%	2019	2018	Volumes	%		
Liquids storage (average monthly capacity in millions of barrels)	109	109	_	%	109	109		%		
Natural gas storage (average monthly working capacity in billions of cubic feet) ⁽⁵⁾	63	65	(2)	(3)%	63	66	(3)	(5)%		
NGL fractionation (average volumes in thousands of barrels per day)	137	132	5	4 %	147	135	12	9 %		
Facilities segment total volumes (average monthly volumes in millions of barrels) ⁽⁶⁾	124	124		%	124	124		%		

** Indicates that variance as a percentage is not meaningful.

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

⁽²⁾ 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.

(3) Represents adjustments included in the performance measure utilized by our CODM in the evaluation of segment results. See Note 14 to our Condensed Consolidated Financial Statements for additional discussion of such adjustments.

⁽⁴⁾ Average monthly volumes are calculated as total volumes for the period divided by the number of months in the period.

- ⁽⁵⁾ The decrease in average monthly working capacity of natural gas storage facilities was driven by adjustments for the net capacity change between capacity additions from fill and dewater operations and capacity losses from salt creep.
- ⁽⁶⁾ Facilities segment total volumes is calculated as the sum of: (i) liquids storage capacity; (ii) 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 (iii) NGL fractionation volumes multiplied by the number of days in the period and divided by the number of months in the period.

The following is a discussion of items impacting Facilities segment operating results for the periods indicated.

Revenues, Purchases and Related Costs and Volumes. The following summarizes the significant drivers of variances in revenues, purchases and related costs and volumes for the comparative periods:

- *Crude Oil Storage*. Revenues increased by \$6 million and \$12 million for the three and six months ended June 30, 2019, respectively, compared to the three and six months ended June 30, 2018 due to increased activity at certain of our terminals, primarily our Cushing terminal, and the addition of 1.0 million barrels of storage capacity at our Midland terminal placed into service in the fourth quarter of 2018 and the first quarter of 2019.
- *Rail Terminals*. Revenues increased by \$6 million and \$12 million for the three and six months ended June 30, 2019, respectively, compared to the three and six months ended June 30, 2018, primarily due to increased activity at our St. James rail terminal.
- *Natural Gas Storage*. Revenues, net of purchases and related costs, were relatively flat for the three months ended June 30, 2019 compared to the three months ended June 30, 2018. Revenues, net of purchases and related costs, increased by \$5 million for the six months ended June 30, 2019 compared to the six months ended June 30, 2018, primarily due to expiring contracts replaced by contracts with higher rates and increased hub activity.

NGL Operations. Revenues decreased by \$5 million and \$16 million for the three and six months ended June 30, 2019, respectively, compared to the three and six months ended June 30, 2018, primarily due to a net unfavorable foreign exchange impact of approximately \$4 million and \$10 million, respectively. The six-month comparative period was further unfavorably impacted by the sale of a natural gas processing facility in the second quarter of 2018.

Field Operating Costs. The decrease in field operating costs for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 was primarily related to a decrease in power-related costs associated with derivative activities (which impact our field operating costs but are excluded from Segment Adjusted EBITDA and thus are reflected as an "Adjustment" in the table above), partially offset by increased personnel costs, including higher costs at our rail terminals as a result of increased activity.

Maintenance Capital. For the three and six months ended June 30, 2019 as compared to the three and six months ended June 30, 2018, maintenance capital spending increased primarily due to the impact of higher expenditures related to cavern maintenance at certain of our gas storage facilities.

Supply and Logistics Segment

Revenues from our Supply and Logistics segment activities reflect the sale of gathered and bulk-purchased crude oil, as well as sales of NGL volumes. Generally, our segment results are impacted by (i) increases or decreases in our Supply and Logistics segment volumes (which consist of lease gathering crude oil purchases volumes and NGL sales volumes), (ii) the overall strength, weakness and volatility of market conditions, including regional differentials, and the allocation of our assets among our various risk management strategies and (iii) the effects of competition on our lease gathering and NGL margins. In addition, the execution of our risk management strategies in conjunction with our assets can provide upside in certain markets.

The following tables set forth our operating results from our Supply and Logistics segment:

Operating Results (1)	Three Months Ended June 30,					Va	riance		Six Mon Jun	ths I ie 30		Variance			
(in millions, except per barrel data)		2019		2018		\$	%	2019			2018		\$	%	
Revenues	\$	7,915	\$	7,781	\$	134	2 %	\$	15,938	\$	15,893	\$	45	— %	
Purchases and related costs		(7,700)		(7,959)		259	3 %		(15,262)		(15,884)		622	4 %	
Field operating costs		(70)		(66)		(4)	(6)%		(139)		(131)		(8)	(6)%	
Segment general and administrative expenses ⁽²⁾		(27)		(29)		2	7 %		(56)		(59)		3	5 %	
Adjustments ⁽³⁾ :															
(Gains)/losses from derivative activities, net of inventory valuation adjustments		49		241		(192)	**		(21)		219		(240)	**	
Long-term inventory costing adjustments		25		5		20	**		4		(7)		11	**	
Equity-indexed compensation expense		1		3		(2)	**		2	6			(4)	**	
Net (gain)/loss on foreign currency revaluation		7		(2)		9	**		12		8		4	**	
Segment Adjusted EBITDA		200	\$	(26)	\$	226	**	\$	478	\$	45	\$	433	**	
Maintenance capital	\$	3	\$	5	\$	(2)	(40)%	\$	5	\$	6	\$	(1)	(17)%	
Segment Adjusted EBITDA per barrel	\$	1.74	\$	(0.24)	\$	1.98	**	\$	1.95	\$	0.19	\$	1.76	**	

Average Daily Volumes (4)	Three Mont June		Vari	ance		hs Ended e 30,	Variance			
(in thousands of barrels per day)	2019	2018	Volumes	%	2019	2018	Volumes	%		
Crude oil lease gathering purchases	1,102	1,028	74	7 %	1,115	1,030	85	8 %		
NGL sales	158	174	(16)	(9)%	242	266	(24)	(9)%		
Supply and Logistics segment total volumes	1,260	1,202	58	5 %	1,357	1,296	61	5 %		

** Indicates that variance as a percentage is not meaningful.

⁽¹⁾ Revenues and costs include intersegment amounts.

⁽²⁾ 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.

- (3) Represents adjustments included in the performance measure utilized by our CODM in the evaluation of segment results. See Note 14 to our Condensed Consolidated Financial Statements for additional discussion of such adjustments.
- ⁽⁴⁾ Average daily volumes are calculated as the total volumes for the period divided by the number of days in the period.

The following table presents the range of the NYMEX WTI benchmark price of crude oil (in dollars per barrel):

	 NYME Crude (
	Low	High
Three months ended June 30, 2019	\$ 51	\$ 66
Three months ended June 30, 2018	\$ 62	\$ 74
Six months ended June 30, 2019	\$ 46	\$ 66
Six months ended June 30, 2018	\$ 59	\$ 74

Our crude oil and NGL supply, logistics and distribution operations are not directly affected by the absolute level of prices. 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. Additionally, net revenues were impacted by net gains and losses from certain derivative activities during the periods.

Our NGL 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.

Segment Adjusted EBITDA and Volumes. The following summarizes the significant items impacting our Supply and Logistics segment operating results for the comparative periods:

- *Crude Oil Operations*. Net revenues from our crude oil supply and logistics operations increased for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 largely due to favorable differentials, primarily in the Permian Basin and Canada.
- NGL Operations. Net revenues from our NGL operations increased for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 primarily due to the streamlining of our NGL activities by focusing on our equity supply from our gathering and processing facilities, favorable regional differentials and the favorable impact of certain non-recurring items recorded in the second quarter of 2019.

- Impact from Certain Derivative Activities Net of Inventory Valuation Adjustments. The impact from certain derivative activities on our net revenues 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), losses on derivatives that are related to investing activities (such as the purchase of linefill) and inventory valuation adjustments, as applicable. See Note 10 to our Condensed Consolidated Financial Statements for a comprehensive discussion regarding our derivatives and risk management activities. These gains and losses impact our net revenues but are excluded from Segment Adjusted EBITDA and thus are reflected as an "Adjustment" in the table above.
- Long-Term Inventory Costing Adjustments. Our net revenues 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. 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. These costing adjustments impact our net revenues but are excluded from Segment Adjusted EBITDA and thus are reflected as an "Adjustment" in the table above.
- *Foreign Exchange Impacts.* Our net revenues 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. These non-cash gains and losses impact our net revenues but are excluded from Segment Adjusted EBITDA and thus are reflected as an "Adjustment" in the table above.
- *Field Operating Costs.* The increase in field operating costs for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 was primarily driven by an increase in trucking costs resulting from higher third-party hauled volumes, partially offset by a decrease in vehicle expense related to the adoption of the new lease accounting standard.

Other Income and Expenses

Depreciation and Amortization

Depreciation and amortization expense increased for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 largely driven by (i) additional depreciation expense associated with the completion of various capital expansion projects and (ii) an adjustment to the useful lives of certain assets.

Gains/Losses on Asset Sales and Asset Impairments, Net

The net gain on asset sales and asset impairments for the three and six months ended June 30, 2018 was largely driven by a gain on the sale of certain pipelines in the Rocky Mountain region, partially offset by a loss on the sale of a non-core asset under construction.

Gain on Investment in Unconsolidated Entities

During the six months ended June 30, 2019, we recognized a non-cash gain of \$267 million related to a fair value adjustment resulting from the accounting for the contribution of our undivided joint interest in the Capline pipeline system for an equity interest in Capline Pipeline Company LLC. See Note 7 to our Condensed Consolidated Financial Statements for additional information.

Interest Expense

The decrease in interest expense for the three and six months ended June 30, 2019 compared to the three and six months ended June 30, 2018 was primarily due to (i) a lower weighted average debt balance during the 2019 periods from lower PAA commercial paper and credit facility borrowings and (ii) higher capitalized interest in the 2019 periods due to additional projects under construction.

Other Income/(Expense), Net

The following table summarizes the components impacting Other income/(expense), net (in millions):

	 Three Mo Jun	nths e 30,		 Six Mon Jur	ths Ei ie 30,	ıded
	2019		2018	2019		2018
Gain/(loss) related to mark-to-market adjustment of the Preferred Distribution Rate Reset						
Option ⁽¹⁾	\$ (7)	\$	8	\$ 16	\$	5
Other	1		3	2		5
	\$ (6)	\$	11	\$ 18	\$	10

⁽¹⁾ See Note 10 to our Condensed Consolidated Financial Statements for additional information.

Income Tax Expense

For the three months ended June 30, 2019 compared to the three months ended June 30, 2018, the lower income tax benefit was primarily due to higher current income tax expense as a result of higher taxable earnings from our Canadian operations, partially offset by a higher deferred tax benefit from (i) the recognition of a deferred tax benefit of \$60 million as a result of the reduction of the provincial tax rate in Alberta, Canada enacted during the second quarter of 2019, partially offset by (ii) higher year-over-year income as impacted by fluctuations in the derivative mark-to-market valuations in our Canadian operations and (iii) higher deferred income tax expense as a result of higher income attributable to PAGP.

The increase in income tax expense for the six months ended June 30, 2019 compared to the six months ended June 30, 2018 was primarily due to higher current income tax expense as a result of higher taxable earnings from our Canadian operations, partially offset by lower deferred income tax expense primarily from (i) the recognition of a deferred tax benefit of \$60 million as a result of the reduction of the provincial tax rate in Alberta, Canada enacted during the second quarter of 2019 and (ii) lower year-over-year income as impacted by fluctuations in the derivative mark-to-market valuations in our Canadian operations, partially offset by (iii) higher deferred income tax expense as a result of higher income attributable to PAGP and a change in our effective tax rate in the first quarter of 2019.

Liquidity and Capital Resources

General

On a consolidated basis, our primary sources of liquidity are (i) cash flow from operating activities, (ii) borrowings under PAA's credit facilities or the PAA commercial paper program and (iii) funds received from sales of equity and debt securities. In addition, we may supplement these sources of liquidity with proceeds from our divestiture program, as further discussed below in the section entitled "—Acquisitions and Capital Expenditures." 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, 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 PAA's 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 equity or debt securities and the sale of assets.

As of June 30, 2019, although we had a working capital deficit of \$10 million, we had approximately \$3.0 billion of liquidity available to meet our ongoing operating, investing and financing needs, subject to continued covenant compliance, as noted below (in millions):

	Ju	As of ne 30, 2019
Availability under PAA senior unsecured revolving credit facility (1) (2)	\$	1,460
Availability under PAA senior secured hedged inventory facility (1) (2)		1,287
Amounts outstanding under PAA commercial paper program		(218)
Subtotal		2,529
Cash and cash equivalents		428
Total	\$	2,957

- ⁽¹⁾ Represents availability prior to giving effect to borrowings 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 \$140 million and \$13 million, respectively.

We believe that we have, and will continue to have, the ability to access the PAA commercial paper program and 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. In addition, usage of the PAA credit facilities, which provide the financial backstop for the PAA commercial paper program, is subject to ongoing compliance with covenants. As of June 30, 2019, PAA was in compliance with all such covenants. Also, see Item 1A. "Risk Factors" included in our 2018 Annual Report on Form 10-K for further discussion regarding such risks that may impact our liquidity and capital resources.

Cash Flow from Operating Activities

For a comprehensive discussion of the primary drivers of cash flow from operating activities, including the impact of varying market conditions and the timing of settlement of our derivatives, see Item 7. "Liquidity and Capital Resources—Cash Flow from Operating Activities" included in our 2018 Annual Report on Form 10-K.

Net cash provided by operating activities for the first six months of 2019 and 2018 was \$1.468 billion and \$1.013 billion, respectively, and primarily resulted from earnings from our operations. Additionally, as discussed further below, changes during these periods in our inventory levels and associated margin balances required as part of our hedging activities impacted our cash flow from operating activities.

During the six months ended June 30, 2019, our cash provided by operating activities was positively impacted by decreases in the volume of inventory that we held, primarily due to the sale of NGL and crude oil inventory. The favorable effects from liquidation of such inventory were partially offset by timing of revenue recognized during the period for which cash was received in prior periods.

During the six months ended June 30, 2018, net cash provided by operating activities was positively impacted by approximately \$300 million of cash received for transactions for which the revenue had been deferred pending the completion of future performance obligations. That positive impact was partially offset by increases in the margin balances required as part of our hedging activities, which were funded by short-term debt.

Acquisitions and Capital Expenditures

In addition to our operating needs discussed above, on a consolidated basis, we also use cash for our acquisition activities and expansion capital projects and maintenance capital activities. Historically, we have financed these expenditures primarily with cash generated by operating activities and the financing activities discussed in "—Equity and Debt Financing Activities" below. In recent years, we have also used proceeds from our divestiture program.



Acquisitions. During the second quarter of 2019, we paid an aggregate of \$47 million to acquire assets, including a crude oil storage terminal.

Capital Projects. We invested approximately \$695 million in midstream infrastructure during the six months ended June 30, 2019, and we expect to invest approximately \$1.5 billion during the full year ending December 31, 2019. See "—Acquisitions and Capital Projects" for detail of our projected capital expenditures for the year ending December 31, 2019. We expect to fund our 2019 capital program with retained cash flow, proceeds from assets sold as part of our divestiture program or debt.

In the first quarter of 2019, we announced the formation of W2W Pipeline, a joint venture with subsidiaries of ExxonMobil and Lotus Midstream, LLC. Subsequent to June 30, 2019, three additional entities joined as partners in W2W Pipeline. As a result, our ownership interest in W2W Pipeline decreased from 20% to 16%. W2W Pipeline is currently developing a new pipeline system that will originate in the Permian Basin in West Texas and transport crude oil to the Texas Gulf Coast. The pipeline system will provide more than 1 million barrels per day of crude oil and condensate capacity, and the project is targeted to commence operations in the first half of 2021. See Note 7 to our Condensed Consolidated Financial Statements for additional information.

During the second quarter of 2019, we announced the formation of Red Oak, a joint venture with a subsidiary of Phillips 66. We own a 50% interest in Red Oak, which is currently developing a new pipeline that will provide crude oil transportation service from Cushing, Oklahoma, and the Permian Basin in West Texas to Corpus Christi, Ingleside, Houston and Beaumont, Texas. Initial service from Cushing to the Gulf Coast is targeted to commence as early as the first quarter of 2021, subject to receipt of applicable permits and regulatory approvals. See Note 7 to our Condensed Consolidated Financial Statements for additional information.

Divestitures. During the second quarter of 2019, we formed a joint venture, Red River LLC, with Delek on our Red River pipeline system. We received approximately \$128 million for Delek's 33% interest in Red River LLC. See Note 9 to our Condensed Consolidated Financial Statements for additional information.

Ongoing Acquisition, Divestiture and Investment Activities. We intend to continue to focus on activities to enhance investment returns and reinforce capital discipline through asset optimization, joint ventures, potential divestitures and similar arrangements. We typically do not announce a transaction until after we have executed a definitive agreement. However, in certain cases in order to protect our business interests or for other reasons, we may defer public announcement of a transaction until closing or a later date. Past experience has demonstrated that discussions and negotiations regarding a potential transaction can advance or terminate in a short period of time. Moreover, the closing of any transaction for which we have entered into a definitive agreement may be subject to customary and other closing conditions, which may not ultimately be satisfied or waived. Accordingly, we can give no assurance that our current or future acquisition or investment efforts will be successful, or that our strategic asset divestitures will be completed. Although we expect the acquisitions and investments we make to be accretive in the long term, we can provide no assurance that our expectations will ultimately be realized. Also, see Item 1A. "Risk Factors—Risks Related to PAA's Business" of our 2018 Annual Report on Form 10-K for further discussion regarding risks related to our acquisitions and divestitures.

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 (including borrowings for NYMEX and ICE margin deposits) and hedged inventory borrowings related to our NGL business and contango market activities. Our financing activities have primarily consisted of equity offerings, PAA senior notes offerings and borrowings and repayments under the credit facilities or the PAA commercial paper program and other debt agreements, as well as payment of distributions to our Class A shareholders and noncontrolling interests.

PAGP Registration Statements. We have filed with the SEC a shelf registration statement that, subject to effectiveness at the time of use, allows us to issue up to an aggregate of \$1.0 billion of equity securities (the "PAGP Traditional Shelf"). All issuances of equity securities associated with our continuous offering program have been issued pursuant to the PAGP Traditional Shelf. At June 30, 2019, we had approximately \$939 million of unsold securities available under the PAGP Traditional Shelf. We also have access to a shelf registration statement (the "PAGP WKSI Shelf"), which provides us with the ability to offer and sell an unlimited amount of equity securities, subject to market conditions and capital needs. We did not conduct any offerings under the PAGP Traditional Shelf or the PAGP WKSI Shelf during the six months ended June 30, 2019.

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 \$1.1 billion of debt or equity securities (the "PAA Traditional Shelf"). At June 30, 2019, PAA had approximately \$1.1 billion of unsold securities available under the PAA Traditional Shelf. PAA also has access to a universal shelf registration statement (the "PAA 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 did not conduct any offerings under the PAA Traditional Shelf or the PAA WKSI Shelf during the six months ended June 30, 2019.

Credit Agreements, Commercial Paper Program and Indentures. The credit agreements for the PAA revolving credit facilities (which impact PAA's ability to access the PAA commercial paper program because they provide the financial backstop that supports PAA's short-term credit ratings) and its GO Zone term loans and the indentures governing its senior notes contain cross-default provisions. A default under PAA's credit agreements or indentures 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, its ability to make distributions of available cash is not restricted. As of June 30, 2019, PAA was in compliance with the covenants contained in its credit agreements and indentures.

During the six months ended June 30, 2019, we had net borrowings under PAA's credit facilities and the PAA commercial paper program of \$318 million. These borrowings resulted primarily from funds needed for general partnership purposes.

During the six months ended June 30, 2018, we had net repayments on PAA's credit facilities and the PAA commercial paper program of \$72 million. The net repayments resulted primarily from cash flow from operating activities, partially offset by borrowings during the period related to funding needs for inventory purchases and related margin activities.

Distributions to Our Class A Shareholders

Distributions to our Class A shareholders. We distribute all 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. Our levels of financial reserves are established by our general partner and include reserves for the proper conduct of our business (including future capital expenditures and anticipated credit needs), compliance with law or contractual obligations and funding of future distributions to our shareholders. On August 14, 2019, we will pay a quarterly distribution of \$0.36 per Class A share (\$1.44 per Class A share on an annualized basis) on our Class A shares outstanding as of July 31, 2019, the record date for such distribution for the period from April 1, 2019 through June 30, 2019. See Note 9 to our Condensed Consolidated Financial Statements for details of distributions paid during or pertaining to the first six months of 2019. Also, see Item 5. "Market for Registrant's Shares, Related Shareholder Matters and Issuer Purchases of Equity Securities—Cash Distribution Policy" included in our 2018 Annual Report on Form 10-K for additional discussion regarding distributions.

Distributions to Noncontrolling Interests

Distributions to noncontrolling interests represent amounts paid on interests in consolidated entities that are not owned by us. As of June 30, 2019, noncontrolling interests in our subsidiaries consisted of (i) limited partner interests in PAA including a 66% interest in PAA's common units and PAA's Series A preferred units combined and 100% of PAA's Series B preferred units, (ii) an approximate 37% limited partner interest in AAP and (iii) a 33% interest in Red River LLC. See Note 9 to our Condensed Consolidated Financial Statements for additional information.

Distributions to PAA's Series A preferred unitholders. On August 14, 2019, PAA will pay a cash distribution of \$37 million (\$0.525 per unit) on its Series A preferred units outstanding as of July 31, 2019, the record date for such distribution for the period from April 1, 2019 through June 30, 2019. See Note 9 to our Condensed Consolidated Financial Statements for details of distributions made during or pertaining to the first six months of 2019.

Distributions to PAA's Series B preferred unitholders. Distributions on PAA's Series B preferred units are payable semi-annually in arrears on the 15th day of May and November. See Note 9 to our Condensed Consolidated Financial Statements for additional information.

Distributions to PAA's common unitholders. On August 14, 2019, PAA will pay a quarterly distribution of \$0.36 per common unit (\$1.44 per common unit on an annualized basis) on its common units outstanding as of July 31, 2019, the record date for such distribution for the period from April 1, 2019 through June 30, 2019. See Note 9 to our Condensed Consolidated Financial Statements for details of distributions paid during or pertaining to the first six months of 2019.

We believe that we have sufficient liquid assets, cash flow from operating activities 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 13 to our Condensed 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. 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 other amounts due under the specified contractual obligations as of June 30, 2019 (in millions):

	Re	mainder of 2019	2020	2021	2022	2023	024 and hereafter	Total
Long-term debt and related interest payments ⁽¹⁾	\$	709	\$ 878	\$ 949	\$ 1,079	\$ 1,599	\$ 8,593	\$ 13,807
Leases ⁽²⁾		72	127	99	86	59	255	698
Other obligations ⁽³⁾		522	863	509	255	230	1,152	3,531
Subtotal		1,303	 1,868	 1,557	 1,420	 1,888	 10,000	 18,036
Crude oil, NGL and other purchases ⁽⁴⁾		4,622	5,955	5,554	5,280	4,865	10,602	36,878
Total	\$	5,925	\$ 7,823	\$ 7,111	\$ 6,700	\$ 6,753	\$ 20,602	\$ 54,914

(1)

Includes debt service payments, interest payments due on PAA's senior notes and the commitment fee on assumed available capacity under the PAA credit facilities, as well as long-term borrowings under the PAA credit agreements and the PAA commercial paper program, if any. Although there may be short-term borrowings under the PAA credit agreements 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 agreements or the PAA commercial paper program) in the amounts above. For additional information regarding PAA's debt obligations, see Note 8 to our Condensed Consolidated Financial Statements.

- ⁽²⁾ Includes both operating and finance leases as defined by FASB guidance. Leases are primarily for (i) railcars, (ii) office space, (iii), land, (iv) vehicles, (v) storage tanks and (vi) tractor trailers. See Note 11 to our Condensed Consolidated Financial Statements for additional information.
- ⁽³⁾ Includes (i) other long-term liabilities, (ii) storage, processing and transportation agreements (including certain agreements for which the amount and timing of expected payments is subject to the completion of underlying construction projects), (iii) certain rights-of-way easements and (iv) noncancelable 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 \$1.7 billion associated with agreements to transport crude oil at posted tariff rates on pipelines that are owned by equity method investees. Our commitment to transport is supported by crude oil buy/sell or other 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 June 2019. 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 and transportation of crude oil, NGL and natural gas. Additionally, we issue letters of credit to support insurance programs, derivative transactions, including hedging-related margin obligations, and construction activities. At June 30, 2019 and December 31, 2018, we had outstanding letters of credit of approximately \$153 million and \$184 million, respectively.

Off-Balance Sheet Arrangements

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

Recent Accounting Pronouncements

See Note 2 to our Condensed Consolidated Financial Statements.

Critical Accounting Policies and Estimates

For a discussion regarding our critical accounting policies and estimates, see "Critical Accounting Policies and Estimates" under Item 7 of our 2018 Annual Report on Form 10-K.

FORWARD-LOOKING STATEMENTS

All statements included in this report, other than statements of historical fact, are forward-looking statements, including but not limited to statements incorporating the words "anticipate," "believe," "estimate," "expect," "plan," "intend" and "forecast," as well as similar expressions and statements regarding our business strategy, plans and objectives for future operations. The absence of such words, expressions or statements, however, does not mean that the statements are not forward-looking. Any such forward-looking statements reflect our current views with respect to future events, based on what we believe to be reasonable assumptions. Certain factors could cause actual results or outcomes to differ materially from the results or outcomes anticipated in the forward-looking statements. The most important of these factors include, but are not limited to:

- our ability to pay distributions to our Class A shareholders;
- our expected receipt of, and amounts of, distributions from Plains AAP, L.P.;
- declines in the actual or expected volume of crude oil and NGL shipped, processed, purchased, stored, fractionated and/or gathered at or through the use of our assets, whether due to declines in production from existing oil and gas reserves, reduced demand, failure to develop or slowdown in the development of additional oil and gas reserves, whether from reduced cash flow to fund drilling or the inability to access capital, or other factors;
- the effects of competition, including the effects of capacity overbuild in areas where we operate;



- market distortions caused by over-commitments to infrastructure projects, which impacts volumes, margins, returns and overall earnings;
- unanticipated changes in crude oil and NGL market structure, grade differentials and volatility (or lack thereof);
- environmental liabilities or events that are not covered by an indemnity, insurance or existing reserves;
- fluctuations in refinery capacity in areas supplied by our mainlines and other factors affecting demand for various grades of crude oil, NGL and natural gas and resulting changes in pricing conditions or transportation throughput requirements;
- maintenance of PAA's credit rating and ability to receive open credit from suppliers and trade counterparties;
- the occurrence of a natural disaster, catastrophe, terrorist attack (including eco-terrorist attacks) or other event, including cyber or other attacks on our electronic and computer systems;
- failure to implement or capitalize, or delays in implementing or capitalizing, on expansion projects, whether due to permitting delays, permitting withdrawals or other factors;
- shortages or cost increases of supplies, materials or labor;
- the impact of current and future laws, rulings, governmental regulations, accounting standards and statements, and related interpretations;
- tightened capital markets or other factors that increase our cost of capital or limit our ability to obtain debt or equity financing on satisfactory terms to fund additional acquisitions, expansion projects, working capital requirements and the repayment or refinancing of indebtedness;
- the availability of, and our ability to consummate, acquisition or combination opportunities;
- the successful integration and future performance of acquired assets or businesses and the risks associated with operating in lines of business that are distinct and separate from historical operations;
- the currency exchange rate of the Canadian dollar;
- continued creditworthiness of, and performance by, our counterparties, including financial institutions and trading companies with which we do business;
- inability to recognize current revenue attributable to deficiency payments received from customers who fail to ship or move more than minimum contracted volumes until the related credits expire or are used;
- non-utilization of our assets and facilities;
- increased costs, or lack of availability, of insurance;
- weather interference with business operations or project construction, including the impact of extreme weather events or conditions;
- the effectiveness of our risk management activities;
- fluctuations in the debt and equity markets, including the price of PAA's units at the time of vesting under its long-term incentive plans;
- risks related to the development and operation of our assets, including our ability to satisfy our contractual obligations to our customers;

- general economic, market or business conditions and the amplification of other risks caused by volatile financial markets, capital constraints and pervasive liquidity concerns; and
- other factors and uncertainties inherent in the transportation, storage, terminalling and marketing of crude oil, as well as in the storage of natural gas and the processing, transportation, fractionation, storage and marketing of natural gas liquids.

Other factors described herein, as well as factors that are unknown or unpredictable, could also have a material adverse effect on future results. Please read "Risk Factors" discussed in Item 1A. of our 2018 Annual Report on Form 10-K. Except as required by applicable securities laws, we do not intend to update these forward-looking statements and information.

Item 3. 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:

<u>Crude oil</u>

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, basis differentials and storage capacity utilization. We manage these exposures with various instruments including futures, forwards, swaps and options.

• <u>Natural gas</u>

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 of natural gas. We manage these exposures with various instruments including futures, swaps and options.

<u>NGL and other</u>

We utilize NGL derivatives, primarily propane and butane 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 futures, forwards, swaps and options.

See Note 10 to our Condensed 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 June 30, 2019 that would be expected from a 10% price increase or decrease is shown in the table below (in millions):

	Fair Va	alue	Effect of 10% Price Increase	Effect of 10% Price Decrease
Crude oil	\$	237	\$ (14)	\$ 20
Natural gas		(16)	\$ 9	\$ (9)
NGL and other		88	\$ (34)	\$ 34
Total fair value	\$	309		

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 June 30, 2019, approximately \$518 million, was subject to interest rate re-sets that generally range from one day to approximately one month. The average interest rate on variable rate debt that was outstanding during the six months ended June 30, 2019 was 3.3%, based upon rates in effect during such period. The fair value of our interest rate derivatives was a liability of \$43 million as of June 30, 2019. A 10% increase in the forward LIBOR curve as of June 30, 2019 would have resulted in an increase of \$19 million to the fair value of our interest rate derivatives. A 10% decrease in the forward LIBOR curve as of June 30, 2019 would have resulted in a decrease of \$19 million to the fair value of our interest rate derivatives. See Note 10 to our Condensed 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, 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 an asset of \$3 million as of June 30, 2019. A 10% increase in the exchange rate (USD-to-CAD) would have resulted in a decrease of \$10 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 \$10 million to the fair value of our foreign currency derivatives. See Note 10 to our Condensed Consolidated Financial Statements for a discussion of our currency exchange rate risk hedging.

Preferred Distribution Rate Reset Option

The Preferred Distribution Rate Reset Option of PAA's Series A preferred units is an embedded derivative that must be bifurcated from the related host contract, PAA's partnership agreement, and recorded at fair value in our Condensed Consolidated Balance Sheets. The valuation model utilized for this embedded derivative contains inputs including PAA's common unit price, ten-year U.S. treasury rates, default probabilities and timing estimates to ultimately calculate the fair value of PAA's Series A preferred units with and without the Preferred Distribution Rate Reset Option. The fair value of this embedded derivative was a liability of \$20 million as of June 30, 2019. A 10% increase or decrease in the fair value would have an impact of \$2 million. See Note 10 to our Condensed Consolidated Financial Statements for a discussion of embedded derivatives.

Item 4. 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 June 30, 2019, the end of the period covered by this report, and, based on such evaluation, our Chief Executive Officer and Chief Financial Officer and Chief Financial Officer and Chief Financial Officer.

Changes in Internal Control over Financial Reporting

In addition to the information concerning our DCP, we are required to disclose certain changes in internal control over financial reporting. We implemented new processes and internal controls in connection with our adoption on January 1, 2019 of FASB accounting standard ASU 2016-02, *Leases (Topic 842)*, and we also implemented a new lease accounting system during the second quarter of 2019.

Except as discussed above, there have been no other changes in our internal control over financial reporting during the second quarter of 2019 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.

PART II. OTHER INFORMATION

Item 1. LEGAL PROCEEDINGS

The information required by this item is included in Note 13 to our Condensed Consolidated Financial Statements, and is incorporated herein by reference thereto.

Item 1A. RISK FACTORS

For a discussion regarding our risk factors, see Item 1A. of our 2018 Annual Report on Form 10-K. Those risks and uncertainties are not the only ones facing us and there may be additional matters of which we are unaware or that we currently consider immaterial. All of those risks and uncertainties could adversely affect our business, financial condition and/or results of operations.

Item 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

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) Class A units of AAP ("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 June 30, 2019, certain Legacy Owners or their permitted transferees exercised the Exchange Right, which resulted in the issuance of 7,331,745 Class A shares. The issuance of Class A shares in connection with the exercise of the Exchange Right, as amended, pursuant to Section 4(a)(2) thereof.

Item 3. DEFAULTS UPON SENIOR SECURITIES

None.

Item 4. MINE SAFETY DISCLOSURES

Not applicable.

Item 5. OTHER INFORMATION

None.

Item 6. EXHIBITS

Exhibit No.		Description
3.1		Certificate of Limited Partnership of Plains GP Holdings, L.P. (incorporated by reference to Exhibit 3.1 to our Registration Statement on Form S-1 (333-190227) filed July 29, 2013).
3.2	_	Second Amended and Restated Agreement of Limited Partnership of Plains GP Holdings, L.P. dated as of November 15, 2016 (incorporated by reference to Exhibit 3.2 to our Current Report on Form 8-K filed November 21, 2016).
3.3	—	Certificate of Formation of PAA GP Holdings LLC (incorporated by reference to Exhibit 3.3 to our Registration Statement on Form S-1 (333-190227) filed July 29, 2013).
3.4	—	<u>Third Amended and Restated Limited Liability Company Agreement of PAA GP Holdings LLC dated as of February 16, 2017</u> (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed February 21, 2017).
3.5	_	Amendment No. 1 dated October 1, 2018 to the Third Amended and Restated Limited Liability Company Agreement of PAA GP Holdings LLC (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed August 20, 2018).
3.6	_	Seventh Amended and Restated Agreement of Limited Partnership of Plains All American Pipeline, L.P., dated as of October 10, 2017 (incorporated by reference to Exhibit 3.1 to PAA's Current Report on Form 8-K filed October 12, 2017).
3.7	—	Seventh Amended and Restated Limited Liability Company Agreement of Plains All American GP LLC dated November 15, 2016 (incorporated by reference to Exhibit 3.3 to our Current Report on Form 8-K filed November 21, 2016).
3.8	_	Eighth Amended and Restated Limited Partnership Agreement of Plains AAP, L.P. dated November 15, 2016 (incorporated by reference to Exhibit 3.4 to our Current Report on Form 8-K filed November 21, 2016).
3.9	—	Amendment No. 1 dated September 26, 2018 to the Eighth Amended and Restated Limited Partnership Agreement of Plains AAP, L.P. (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed October 2, 2018).
3.10	_	Amendment No. 2 dated May 23, 2019 to the Eighth Amended and Restated Limited Partnership Agreement of Plains AAP, L.P. (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed May 30, 2019).
3.11	—	Limited Liability Company Agreement of PAA GP LLC dated December 28, 2007 (incorporated by reference to Exhibit 3.3 to PAA's Current Report on Form 8-K filed January 4, 2008).
4.1	—	Indenture dated September 25, 2002 among Plains All American Pipeline, L.P., PAA Finance Corp. and Wachovia Bank, National Association, as trustee (incorporated by reference to Exhibit 4.1 to PAA's Quarterly Report on Form 10-Q for the quarter ended September 30, 2002).
4.2	—	Sixth Supplemental Indenture (Series A and Series B 6.70% Senior Notes due 2036) dated May 12, 2006 among Plains All American Pipeline, L.P., PAA Finance Corp., the Subsidiary Guarantors named therein and Wachovia Bank, National Association, as trustee (incorporated by reference to Exhibit 4.1 to PAA's Current Report on Form 8-K filed May 12, 2006).
4.3	_	Tenth Supplemental Indenture (Series A and Series B 6.650% Senior Notes due 2037) dated October 30, 2006 among Plains All American Pipeline, L.P., PAA Finance Corp., the Subsidiary Guarantors named therein and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.2 to PAA's Current Report on Form 8-K filed October 30, 2006).
4.4	_	Seventeenth Supplemental Indenture (5.75% Senior Notes due 2020) dated September 4, 2009 among Plains All American <u>Pipeline, L.P., PAA Finance Corp., the Subsidiary Guarantors named therein and U.S. Bank National Association, as trustee</u> (incorporated by reference to Exhibit 4.1 to PAA's Current Report on Form 8-K filed September 4, 2009).
4.5	—	Nineteenth Supplemental Indenture (5.00% Senior Notes due 2021) dated January 14, 2011 among Plains All American Pipeline, L.P., PAA Finance Corp., the Subsidiary Guarantors named therein and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to PAA's Current Report on Form 8-K filed January 11, 2011).

4.6	_	Twentieth Supplemental Indenture (3.65% Senior Notes due 2022) dated March 22, 2012 among Plains All American Pipeline, L.P., PAA Finance Corp and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to PAA's Current Report on Form 8-K filed March 26, 2012).
4.7	_	Twenty-First Supplemental Indenture (5.15% Senior Notes due 2042) dated March 22, 2012 among Plains All American Pipeline, L.P., PAA Finance Corp and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.3 to PAA's Current Report on Form 8-K filed March 26, 2012).
4.8	_	Twenty-Second Supplemental Indenture (2.85% Senior Notes due 2023) dated December 10, 2012, by and among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to PAA's Current Report on Form 8-K filed December 12, 2012).
4.9	_	Twenty-Third Supplemental Indenture (4.30% Senior Notes due 2043) dated December 10, 2012, by and among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.3 to PAA's Current Report on Form 8-K filed December 12, 2012).
4.10	_	Twenty-Fourth Supplemental Indenture (3.85% Senior Notes due 2023) dated August 15, 2013, by and among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to PAA's Current Report on Form 8-K filed August 15, 2013).
4.11	_	Twenty-Fifth Supplemental Indenture (4.70% Senior Notes due 2044) dated April 23, 2014, by and among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed April 29, 2014).
4.12	_	Twenty-Sixth Supplemental Indenture (3.60% Senior Notes due 2024) dated September 9, 2014, by and among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed September 11, 2014).
4.13	_	<u>Twenty-Seventh Supplemental Indenture (2.60% Senior Notes due 2019) dated December 9, 2014, by and among Plains All</u> <u>American Pipeline, L.P., PAA Finance Corp., and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed December 11, 2014).</u>
4.14		<u>Twenty-Eighth Supplemental Indenture (4.90% Senior Notes due 2045) dated December 9, 2014, by and among Plains All</u> <u>American Pipeline, L.P., PAA Finance Corp., and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.3 to our Current Report on Form 8-K filed December 11, 2014).</u>
4.15	—	<u>Twenty-Ninth Supplemental Indenture (4.65% Senior Notes due 2025) dated August 24, 2015, by and among Plains All American</u> <u>Pipeline, L.P., PAA Finance Corp., and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to</u> <u>PAA's Current Report on Form 8-K filed August 26, 2015).</u>
4.16	_	Thirtieth Supplemental Indenture (4.50% Senior Notes due 2026) dated November 22, 2016, by and among Plains All American Pipeline, L.P., PAA Finance Corp., and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to PAA's Current Report on Form 8-K filed November 29, 2016).
4.17	_	Shareholder and Registration Rights Agreement dated October 21, 2013 by and among Plains GP Holdings, L.P. and the other parties signatory thereto (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed October 25, 2013).
31.1 †	_	Certification of Principal Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a).
31.2 †		Certification of Principal Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a).
32.1 ††	_	Certification of Principal Executive Officer pursuant to 18 U.S.C. 1350.
32.2 ††	_	Certification of Principal Financial Officer pursuant to 18 U.S.C. 1350.
101.INS†	_	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH†	_	Inline XBRL Taxonomy Extension Schema Document

101.CAL†	—	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF†	_	Inline XBRL Taxonomy Extension Definition Linkbase Document

- 101.LAB† Inline XBRL Taxonomy Extension Label Linkbase Document
- 101.PRE† Inline XBRL Taxonomy Extension Presentation Linkbase Document

++ Furnished herewith.

[†] Filed herewith.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

	PLAIN	LAINS GP HOLDINGS, L.P.	
	By:	PAA GP HOLDINGS LLC, its general partner	
	By:	/s/ Willie Chiang Willie Chiang, Chief Executive Officer and Director of PAA GP Holdings LLC (Principal Executive Officer)	
August 8, 2019			
	By:	/s/ Al Swanson Al Swanson, Executive Vice President and Chief Financial Officer of PAA GP Holdings LLC (Principal Financial Officer)	
August 8, 2019	By:	/s/ Chris Herbold Chris Herbold, Senior Vice President and Chief Accounting Officer of PAA GP Holdings LLC (Principal Accounting Officer)	
August 8, 2019			
	74		

CERTIFICATION

I, Willie Chiang, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Plains GP Holdings, L.P. (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 8, 2019

/s/ Willie Chiang

Willie Chiang Chief Executive Officer

CERTIFICATION

I, Al Swanson, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Plains GP Holdings, L.P. (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 8, 2019

/s/ Al Swanson

Al Swanson Chief Financial Officer

CERTIFICATION OF CHIEF EXECUTIVE OFFICER OF PLAINS GP HOLDINGS, L.P. PURSUANT TO 18 U.S.C. 1350

I, Willie Chiang, Chief Executive Officer of Plains GP Holdings, L.P. (the "Company"), hereby certify that:

(i) the accompanying report on Form 10-Q for the period ended June 30, 2019 and filed with the Securities and Exchange Commission on the date hereof (the "Report") by the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Willie Chiang

Name: Willie Chiang Date: August 8, 2019

CERTIFICATION OF CHIEF FINANCIAL OFFICER OF PLAINS GP HOLDINGS, L.P. PURSUANT TO 18 U.S.C. 1350

I, Al Swanson, Chief Financial Officer of Plains GP Holdings, L.P. (the "Company"), hereby certify that:

(i) the accompanying report on Form 10-Q for the period ended June 30, 2019 and filed with the Securities and Exchange Commission on the date hereof (the "Report") by the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Al Swanson

Name: Al Swanson Date: August 8, 2019