

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

Form 10-Q

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

For the quarterly period ended September 30, 2017

OR

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

For the transition period from to

Commission file number: 001-33492

CVR ENERGY, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

2277 Plaza Drive, Suite 500

Sugar Land, Texas

(Address of principal executive offices)

61-1512186

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

77479

(Zip Code)

(281) 207-3200

(Registrant's telephone number, including area code)

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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post 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.

Large accelerated filer

Accelerated filer

Non-accelerated filer

(Do not check if a smaller reporting company)

Smaller reporting company

Emerging growth company

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 by Rule 12b-2 of the Exchange Act). Yes No

There were 86,831,050 shares of the registrant's common stock outstanding at October 30, 2017.

CVR ENERGY, INC. AND SUBSIDIARIES
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For The Quarter Ended September 30, 2017

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GLOSSARY OF SELECTED TERMS

The following are definitions of certain terms used in this Quarterly Report on Form 10-Q for the quarter ended September 30, 2017 (this "Report").

2016 Form 10-K — Our Annual Report on Form 10-K for the year ended December 31, 2016 filed with the SEC on February 21, 2017.

2021 Notes — \$320.0 million aggregate principal amount of 6.5% Senior Notes due 2021, which were issued by CVR Nitrogen and CVR Nitrogen Finance Corporation.

2022 Notes — \$500.0 million aggregate principal amount of 6.5% Senior Notes due 2022, which were issued by Refining, LLC and Coffeyville Finance on October 23, 2012 and fully and unconditionally guaranteed by the Refining Partnership and each of Refining LLC's domestic subsidiaries other than Coffeyville Finance.

2023 Notes — \$645.0 million aggregate principal amount of 9.25% Senior Notes due 2023, which were issued through CVR Partners and CVR Nitrogen Finance Corporation.

2-1-1 crack spread — The approximate gross margin resulting from processing two barrels of crude oil to produce one barrel of gasoline and one barrel of distillate. The 2-1-1 crack spread is expressed in dollars per barrel.

Amended and Restated ABL Credit Facility — The Refining Partnership's senior secured asset based revolving credit facility with a group of lenders and Wells Fargo Bank, National Association as administrative agent and collateral agent.

ABL Credit Facility — The Nitrogen Fertilizer Partnership's senior secured asset based revolving credit facility with a group of lenders and UBS AG, Stamford Branch, as administrative agent and collateral agent.

ammonia — Ammonia is a direct application fertilizer and is primarily used as a building block for other nitrogen products for industrial applications and finished fertilizer products.

barrel — Common unit of measure in the oil industry which equates to 42 gallons.

blendstocks — Various compounds that are combined with gasoline or diesel from the crude oil refining process to make finished gasoline and diesel fuel; these may include natural gasoline, fluid catalytic cracking unit or FCCU gasoline, ethanol, reformate or butane, among others.

bpd — Abbreviation for barrels per day.

bpcd — Abbreviation for barrels per calendar day, which refers to the total number of barrels processed in a refinery within a year, divided by 365 days, thus reflecting all operational and logistical limitations.

bulk sales — Volume sales through third-party pipelines, in contrast to tanker truck quantity rack sales.

capacity — Capacity is defined as the throughput a process unit is capable of sustaining, either on a barrel per calendar or stream day basis. The throughput may be expressed in terms of maximum sustainable, nameplate or economic capacity. The maximum sustainable or nameplate capacities may not be the most economical. The economic capacity is the throughput that generally provides the greatest economic benefit based on considerations such as crude oil and other feedstock costs, product values and downstream unit constraints.

catalyst — A substance that alters, accelerates, or instigates chemical changes, but is neither produced, consumed nor altered in the process.

Change of Control Offer — The offer commenced on April 29, 2016 by CVR Nitrogen and CVR Nitrogen Finance Corporation to purchase any and all of the outstanding 2021 Notes at 101% of par value.

Coffeyville Fertilizer Facility — CVR Partners' nitrogen fertilizer manufacturing facility located in Coffeyville, Kansas.

Coffeyville Finance — Coffeyville Finance Inc., a wholly-owned subsidiary of Refining LLC and indirect wholly-owned subsidiary of the Refining Partnership.

corn belt — The primary corn producing region of the United States, which includes Illinois, Indiana, Iowa, Minnesota, Missouri, Nebraska, Ohio and Wisconsin.

crack spread — A simplified calculation that measures the difference between the price for light products and crude oil. For example, the 2-1-1 crack spread is often referenced and represents the approximate gross margin resulting from processing two barrels of crude oil to produce one barrel of gasoline and one barrel of distillate.

Credit Parties — CRLLC and certain subsidiaries party to the Amended and Restated ABL Credit Facility.

CRLLC — Coffeyville Resources, LLC, a wholly-owned subsidiary of the Company.

CRPLLC — Coffeyville Resources Pipeline, LLC.

CRLLC Facility — The Nitrogen Fertilizer Partnership's \$300.0 million senior term loan credit facility with CRLLC, which was repaid in full and terminated on June 10, 2016.

CRNF — Coffeyville Resources Nitrogen Fertilizers, LLC a subsidiary of the Nitrogen Fertilizer Partnership.

CRRM — Coffeyville Resources Refining and Marketing, LLC, a wholly-owned subsidiary of Refining LLC and indirect wholly-owned subsidiary of the Refining Partnership.

CVR Energy or CVR or Company — CVR Energy, Inc.

CVR Nitrogen — CVR Nitrogen, LP (formerly known as East Dubuque Nitrogen Partners, L.P. and also formerly known as Rentech Nitrogen Partners L.P.).

CVR Nitrogen GP — CVR Nitrogen GP, LLC (formerly known as East Dubuque Nitrogen GP, LLC and also formerly known as Rentech Nitrogen GP, LLC).

CVR Partners or the Nitrogen Fertilizer Partnership — CVR Partners, LP.

CVR Refining or the Refining Partnership — CVR Refining, LP.

CVR Refining GP or general partner — CVR Refining GP, LLC, an indirect wholly-owned subsidiary of CVR Energy.

distillates — Primarily diesel fuel, kerosene and jet fuel.

East Dubuque Facility — CVR Partners' nitrogen fertilizer manufacturing facility located in East Dubuque, Illinois.

East Dubuque Merger — The transactions contemplated by the Merger Agreement, whereby the Nitrogen Fertilizer Partnership acquired CVR Nitrogen and CVR Nitrogen GP on April 1, 2016.

ethanol — A clear, colorless, flammable oxygenated hydrocarbon. Ethanol is typically produced chemically from ethylene, or biologically from fermentation of various sugars from carbohydrates found in agricultural crops and cellulosic residues from crops or wood. It is used in the United States as a gasoline octane enhancer and oxygenate.

farm belt — Refers to the states of Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Texas and Wisconsin.

feedstocks — Petroleum products, such as crude oil and natural gas liquids, that are processed and blended into refined products, such as gasoline, diesel fuel and jet fuel, during the refining process.

Group 3 — A geographic subset of the PADD II region comprising refineries in Oklahoma, Kansas, Missouri, Nebraska and Iowa. Current Group 3 refineries include the Refining Partnership's Coffeyville and Wynnewood refineries; the Valero Ardmore refinery in Ardmore, OK; HollyFrontier's Tulsa refinery in Tulsa, OK and El Dorado refinery in El Dorado, KS; Phillips 66's Ponca City refinery in Ponca City, OK; and CHS Inc.'s refinery in McPherson, KS.

heavy crude oil — A relatively inexpensive crude oil characterized by high relative density and viscosity. Heavy crude oils require greater levels of processing to produce high value products such as gasoline and diesel fuel.

independent petroleum refiner — A refiner that does not have crude oil exploration or production operations. An independent refiner purchases the crude oil throughputs in its refinery operations from third parties.

LIBOR — London Interbank Offered Rate.

light crude oil — A relatively expensive crude oil characterized by low relative density and viscosity. Light crude oils require lower levels of processing to produce high value products such as gasoline and diesel fuel.

Merger Agreement — The Agreement and Plan of Merger, dated as of August 9, 2015, whereby the Nitrogen Fertilizer Partnership acquired CVR Nitrogen and CVR Nitrogen GP.

MMBtu — One million British thermal units or Btu: a measure of energy. One Btu of heat is required to raise the temperature of one pound of water one degree Fahrenheit.

MSCF — One thousand standard cubic feet, a customary gas measurement unit.

natural gas liquids — Natural gas liquids, often referred to as NGLs, are both feedstocks used in the manufacture of refined fuels, as well as products of the refining process. Common NGLs used include propane, isobutane, normal butane and natural gasoline.

Nitrogen Fertilizer Partnership credit facility — CRNF's \$150.0 million term loan, \$25.0 million revolving and \$50.0 million uncommitted incremental credit facility, guaranteed by the Nitrogen Fertilizer Partnership, entered into with a group of lenders including Goldman Sachs Lending Partners LLC, as administrative and collateral agent, which was repaid in full and terminated on April 1, 2016.

PADD II — Midwest Petroleum Area for Defense District which includes Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee and Wisconsin.

petroleum coke (pet coke) — A coal-like substance that is produced during the refining process.

product pricing at gate — Product pricing at gate represents net sales less freight revenue divided by product sales volume in tons. Product pricing at gate is also referred to as netback.

rack sales — Sales which are made at terminals into third-party tanker trucks.

refined products — Petroleum products, such as gasoline, diesel fuel and jet fuel, that are produced by a refinery.

Refining LLC — CVR Refining, LLC, a wholly-owned subsidiary of the Refining Partnership.

Refining Partnership IPO — The initial public offering of 27,600,000 common units representing limited partner interests of the Refining Partnership, which closed on January 23, 2013 (which includes the underwriters' subsequently exercised option to purchase additional common units).

RFS — Renewable Fuel Standard of the United States Environmental Protection Agency.

RINs — Renewable fuel credits, known as renewable identification numbers.

sour crude oil — A crude oil that is relatively high in sulfur content, requiring additional processing to remove the sulfur. Sour crude oil is typically less expensive than sweet crude oil.

spot market — A market in which commodities are bought and sold for cash and delivered immediately.

sweet crude oil — A crude oil that is relatively low in sulfur content, requiring less processing to remove the sulfur. Sweet crude oil is typically more expensive than sour crude oil.

Tender Offer — The cash tender offer commenced on April 29, 2016 by CVR Nitrogen and CVR Nitrogen Finance Corporation to purchase any and all of the outstanding 2021 Notes at 101.5% of par value.

throughput — The volume processed through a unit or a refinery or transported on a pipeline.

turnaround — A periodically required standard procedure to inspect, refurbish, repair and maintain the refinery or nitrogen fertilizer plant assets. This process involves the shutdown and inspection of major processing units and occurs every four to five years for the refineries and every two to three years for the nitrogen fertilizer plant.

UAN — An aqueous solution of urea and ammonium nitrate used as a fertilizer.

Velocity — Velocity Central Oklahoma Pipeline LLC.

Vitol — Vitol Inc.

Vitol Agreement — The Amended and Restated Crude Oil Supply Agreement between CRRM and Vitol.

VPP — Velocity Pipeline Partners, LLC.

WCS — Western Canadian Select crude oil, a medium to heavy, sour crude oil, characterized by an American Petroleum Institute gravity ("API gravity") of between 20 and 22 degrees and a sulfur content of approximately 3.3 weight percent.

Wells Fargo Credit Agreement — CVR Nitrogen's credit agreement with Wells Fargo, as successor-in-interest by assignment from General Electric Company, as administrative agent, which was repaid in April 2016 and terminated.

WTI — West Texas Intermediate crude oil, a light, sweet crude oil, characterized by an API gravity between 39 and 41 degrees and a sulfur content of approximately 0.4 weight percent that is used as a benchmark for other crude oils.

WTS — West Texas Sour crude oil, a relatively light, sour crude oil, characterized by an API gravity of between 30 and 32 degrees and a sulfur content of approximately 2.0 weight percent.

yield — The percentage of refined products that is produced from crude oil and other feedstocks.

PART I. FINANCIAL INFORMATION
Item 1. Financial Statements

CVR ENERGY, INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS

	September 30, 2017	December 31, 2016
	(unaudited)	
	(in millions, except share data)	
ASSETS		
Current assets:		
Cash and cash equivalents (including \$630.3 and \$369.7, respectively, of consolidated variable interest entities ("VIEs"))	\$ 849.1	\$ 735.8
Accounts receivable of VIEs, net of allowance for doubtful accounts of \$1.3 and \$0.5, respectively	143.1	151.9
Inventories of VIEs	339.7	349.2
Prepaid expenses and other current assets (including \$38.2 and \$65.0, respectively, of VIEs)	41.1	68.4
Income tax receivable (including \$0.2 and \$0.2, respectively, of VIEs)	10.2	10.2
Total current assets	1,383.2	1,315.5
Property, plant and equipment, net of accumulated depreciation (including \$2,562.2 and \$2,645.1, respectively, of VIEs)	2,586.5	2,672.1
Intangible assets of VIEs, net	0.2	0.2
Goodwill of VIEs	41.0	41.0
Other long-term assets (including \$18.4 and \$19.1, respectively, of VIEs)	21.9	21.4
Total assets	\$ 4,032.8	\$ 4,050.2
LIABILITIES AND EQUITY		
Current liabilities:		
Note payable and capital lease obligations of VIEs	\$ 2.0	\$ 1.8
Accounts payable (including \$279.5 and \$247.7, respectively, of VIEs)	281.9	251.0
Personnel accruals (including \$24.6 and \$23.6, respectively, of VIEs)	48.5	45.7
Accrued taxes other than income taxes (including \$23.1 and \$27.0, respectively, of VIEs)	23.3	27.0
Due to parent	2.6	10.6
Deferred revenue of VIEs	19.4	12.6
Other current liabilities (including \$240.0 and \$216.8, respectively, of VIEs)	240.5	217.2
Total current liabilities	618.2	565.9
Long-term liabilities:		
Long-term debt and capital lease obligations of VIEs, net of current portion	1,164.1	1,162.8
Deferred income taxes (including \$0.7 and \$0.8, respectively, of VIEs)	593.2	579.9
Other long-term liabilities (including \$5.6 and \$5.4, respectively, of VIEs)	35.2	32.0
Total long-term liabilities	1,792.5	1,774.7
Commitments and contingencies		
Equity:		
CVR stockholders' equity:		
Common stock \$0.01 par value per share, 350,000,000 shares authorized, 86,929,660 shares issued	0.9	0.9
Additional paid-in-capital	1,197.6	1,197.6
Retained deficit	(434.4)	(338.1)
Treasury stock, 98,610 shares at cost	(2.3)	(2.3)
Accumulated other comprehensive income, net of tax	—	—
Total CVR stockholders' equity	761.8	858.1
Noncontrolling interest	860.3	851.5
Total equity	1,622.1	1,709.6
Total liabilities and equity	\$ 4,032.8	\$ 4,050.2

See accompanying notes to the condensed consolidated financial statements.

CVR ENERGY, INC. AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
	(unaudited)			
	(in millions, except per share data)			
Net sales	\$ 1,453.8	\$ 1,240.3	\$ 4,395.3	\$ 3,429.0
Operating costs and expenses:				
Cost of materials and other	1,132.4	1,005.7	3,582.2	2,719.3
Direct operating expenses (exclusive of depreciation and amortization as reflected below)	161.1	129.5	423.4	409.2
Depreciation and amortization	51.3	48.1	151.7	134.5
Cost of sales	1,344.8	1,183.3	4,157.3	3,263.0
Selling, general and administrative expenses (exclusive of depreciation and amortization as reflected below)	27.3	27.8	82.7	81.7
Depreciation and amortization	2.8	2.0	7.5	6.3
Total operating costs and expenses	1,374.9	1,213.1	4,247.5	3,351.0
Operating income	78.9	27.2	147.8	78.0
Other income (expense):				
Interest expense and other financing costs	(27.6)	(26.2)	(82.3)	(56.8)
Interest income	0.2	0.2	0.8	0.5
Loss on derivatives, net	(17.0)	(1.7)	(4.8)	(4.8)
Loss on extinguishment of debt	—	—	—	(5.1)
Other income, net	—	5.0	0.1	5.5
Total other expense	(44.4)	(22.7)	(86.2)	(60.7)
Income before income tax expense	34.5	4.5	61.6	17.3
Income tax expense	9.2	2.5	17.4	2.3
Net income	25.3	2.0	44.2	15.0
Less: Net income (loss) attributable to noncontrolling interest	3.1	(3.4)	10.3	(2.6)
Net income attributable to CVR Energy stockholders	\$ 22.2	\$ 5.4	\$ 33.9	\$ 17.6
Basic and diluted earnings per share	\$ 0.26	\$ 0.06	\$ 0.39	\$ 0.20
Dividends declared per share	\$ 0.50	\$ 0.50	\$ 1.50	\$ 1.50
Weighted-average common shares outstanding:				
Basic and diluted	86.8	86.8	86.8	86.8

See accompanying notes to the condensed consolidated financial statements.

CVR ENERGY, INC. AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
	(unaudited)			
	(in millions)			
Net income	\$ 25.3	\$ 2.0	\$ 44.2	\$ 15.0
Other comprehensive income (loss)				
Unrealized gain on available-for-sale securities, net of tax of \$0, \$0, \$0 and \$0.2, respectively	—	—	—	0.3
Net gain reclassified into income on sale of available-for-sale securities, net of tax \$0, (\$0.2), \$0 and (\$0.2), respectively (Note 13)	—	(0.3)	—	(0.3)
Net loss reclassified into income on settlement of interest rate swaps, net of tax of \$0, \$0, \$0 and \$0, respectively	—	—	—	0.1
Total other comprehensive income (loss)	—	(0.3)	—	0.1
Comprehensive income	25.3	1.7	44.2	15.1
Less: Comprehensive income (loss) attributable to noncontrolling interest	3.1	(3.4)	10.3	(2.6)
Comprehensive income attributable to CVR Energy stockholders	\$ 22.2	\$ 5.1	\$ 33.9	\$ 17.7

See accompanying notes to the condensed consolidated financial statements.

CVR ENERGY, INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

	Common Stockholders							Noncontrolling Interest	Total Equity
	Shares Issued	\$0.01 Par Value Common Stock	Additional Paid-In Capital	Retained Deficit	Treasury Stock	Total CVR Stockholders' Equity			
(unaudited)									
(in millions, except share data)									
Balance at December 31, 2016	86,929,660	\$ 0.9	\$ 1,197.6	\$ (338.1)	\$ (2.3)	\$ 858.1	\$ 851.5	\$	1,709.6
Dividends paid to CVR Energy stockholders	—	—	—	(130.2)	—	(130.2)	—	—	(130.2)
Distributions from CVR Partners to public unitholders	—	—	—	—	—	—	(1.5)	—	(1.5)
Net income	—	—	—	33.9	—	33.9	10.3	—	44.2
Other comprehensive income, net of tax	—	—	—	—	—	—	—	—	—
Balance at September 30, 2017	86,929,660	\$ 0.9	\$ 1,197.6	\$ (434.4)	\$ (2.3)	\$ 761.8	\$ 860.3	\$	1,622.1

See accompanying notes to the condensed consolidated financial statements.

CVR ENERGY, INC. AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

	Nine Months Ended September 30,	
	2017	2016
	(unaudited)	
	(in millions)	
Cash flows from operating activities:		
Net income	\$ 44.2	\$ 15.0
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	159.2	140.8
Allowance for doubtful accounts	0.8	0.1
Amortization of deferred financing costs and original issue discount	3.7	2.4
Amortization of debt fair value adjustment	—	1.3
Deferred income taxes expense	15.4	(22.5)
Loss on disposition of assets	1.7	0.4
Loss on extinguishment of debt	—	5.1
Share-based compensation	9.9	5.7
Gain on sale of available-for-sale securities	—	(4.9)
Unrealized gain on securities	—	(0.3)
Loss on derivatives, net	4.8	4.8
Current period settlements on derivative contracts	1.1	35.2
Income from equity method investment, net of distributions	(0.1)	—
Changes in assets and liabilities:		
Accounts receivable	8.1	(35.3)
Inventories	9.1	18.5
Prepaid expenses and other current assets	26.5	6.2
Due to/from parent	(8.0)	8.9
Other long-term assets	0.5	0.1
Accounts payable	36.5	(42.3)
Accrued income taxes	—	0.4
Deferred revenue	7.4	(27.7)
Other current liabilities	6.5	107.3
Other long-term liabilities	(0.5)	(0.3)
Net cash provided by operating activities	<u>326.8</u>	<u>218.9</u>
Cash flows from investing activities:		
Capital expenditures	(79.9)	(105.6)
Proceeds from sale of assets	0.1	—
Acquisition of CVR Nitrogen, net of cash acquired	—	(63.9)
Purchase of securities	—	(4.2)
Investment in affiliate, net of return of investment	(0.6)	(3.2)
Purchase of available-for-sale securities	—	(14.4)
Proceeds from sale of available-for-sale securities	—	19.3
Net cash used in investing activities	<u>(80.4)</u>	<u>(172.0)</u>
Cash flows from financing activities:		
Payment of capital lease obligations	(1.4)	(1.2)
Principal and premium payments on 2021 Notes	—	(320.5)
Principal payments on CRNF credit facility	—	(125.0)
Payment of revolving debt	—	(49.1)
Payment of deferred financing costs	—	(10.2)
Proceeds on issuance of 2023 Notes, net of original issue discount	—	628.8
Dividends to CVR Energy's stockholders	(130.2)	(130.2)
Distributions to CVR Partners' noncontrolling interest holders	(1.5)	(42.0)
Net cash used in financing activities	<u>(133.1)</u>	<u>(49.4)</u>
Net increase (decrease) in cash and cash equivalents	113.3	(2.5)
Cash and cash equivalents, beginning of period	735.8	765.1
Cash and cash equivalents, end of period	<u>\$ 849.1</u>	<u>\$ 762.6</u>

Supplemental disclosures:

Cash paid (refunded) for income taxes, net	\$	10.1	\$	15.2
Cash paid for interest, net of capitalized interest of \$0.8 and \$5.0 in 2017 and 2016, respectively	\$	55.5	\$	26.9
Non-cash investing and financing activities:				
Construction in progress additions included in accounts payable	\$	7.7	\$	14.6
Change in accounts payable related to construction in progress additions	\$	8.6	\$	7.7
Landlord incentives for leasehold improvements	\$	1.2	\$	—
Fair value of common units issued in a business combination	\$	—	\$	335.7
Fair value of debt assumed in a business combination	\$	—	\$	367.5
Reduction of proceeds from 2023 Notes from underwriting discount	\$	—	\$	16.1

See accompanying notes to the condensed consolidated financial statements.

CVR ENERGY, INC. AND SUBSIDIARIES
NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
September 30, 2017
(unaudited)

(1) Organization and Basis of Presentation

Organization

The "Company," "CVR Energy" or "CVR" are used in this Report to refer to CVR Energy, Inc. and, unless the context otherwise requires, its subsidiaries.

CVR is a diversified holding company primarily engaged in the petroleum refining and nitrogen fertilizer manufacturing industries through its holdings in CVR Refining, LP ("CVR Refining" or the "Refining Partnership") and CVR Partners, LP ("CVR Partners" or the "Nitrogen Fertilizer Partnership"). The Refining Partnership is an independent petroleum refiner and marketer of high value transportation fuels. The Nitrogen Fertilizer Partnership produces and markets nitrogen fertilizers in the form of UAN and ammonia. The Company reports in two business segments: the petroleum segment (the operations of CVR Refining) and the nitrogen fertilizer segment (the operations of CVR Partners).

CVR's common stock is listed on the NYSE under the symbol "CVI." On May 7, 2012, an affiliate of Icahn Enterprises L.P. ("IEP") announced that they had acquired control of CVR pursuant to a tender offer for all of the Company's common stock. As of September 30, 2017, IEP and its affiliates owned approximately 82% of the Company's outstanding shares.

CVR Partners, LP

On April 13, 2011, the Nitrogen Fertilizer Partnership completed the initial public offering ("IPO") of its common units representing limited partnership interests. The common units, which are listed on the NYSE, began trading on April 8, 2011 under the symbol "UAN."

Immediately prior to the Nitrogen Fertilizer Partnership's acquisition of CVR Nitrogen, LP, public security holders held approximately 47% of the outstanding Nitrogen Fertilizer Partnership common units, and Coffeyville Resources, LLC ("CRLLC"), a wholly owned subsidiary of the Company, held approximately 53% of the outstanding Nitrogen Fertilizer Partnership common units. As a result of the Nitrogen Fertilizer Partnership's acquisition of CVR Nitrogen, LP and issuance of the unit consideration, the noncontrolling interest related to the Nitrogen Fertilizer Partnership reflected in our Consolidated Financial Statements on April 1, 2016 and from such date and as of September 30, 2017 was approximately 66%. In addition, CRLLC owns 100% of the Nitrogen Fertilizer Partnership's general partner, CVR GP, LLC, which only holds a non-economic general partner interest. The noncontrolling interest reflected on the Condensed Consolidated Balance Sheets of CVR is impacted by the net income of, and distributions from, the Nitrogen Fertilizer Partnership.

CVR Refining, LP

On January 23, 2013, the Refining Partnership completed the IPO of its common units representing limited partner interests. The common units, which are listed on the NYSE, began trading on January 17, 2013 under the symbol "CVRR."

As of September 30, 2017, public security holders held approximately 34% of the Refining Partnership's outstanding common units (including common units owned by affiliates of IEP, representing approximately 3.9% of the Refining Partnership's outstanding common units), and CVR Refining Holdings, LLC ("CVR Refining Holdings"), a subsidiary of CRLLC, held approximately 66% of the Refining Partnership's outstanding common units. In addition, CVR Refining Holdings owns 100% of the Refining Partnership's general partner, CVR Refining GP, LLC ("CVR Refining GP"), which only holds a non-economic general partner interest. The noncontrolling interest reflected on the Condensed Consolidated Balance Sheets of CVR is impacted by the net income of, and distributions from the Refining Partnership.

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Basis of Presentation

The accompanying condensed consolidated financial statements were prepared in accordance with U.S. generally accepted accounting principles ("GAAP") and in accordance with the rules and regulations of the Securities and Exchange Commission ("SEC"). The condensed consolidated financial statements include the accounts of CVR and its direct and indirect subsidiaries including the Nitrogen Fertilizer Partnership, the Refining Partnership and their respective subsidiaries, as discussed further below. The ownership interests of noncontrolling investors in CVR's subsidiaries are recorded as a noncontrolling interest included as a separate component of equity for all periods presented. All intercompany account balances and transactions have been eliminated in consolidation. Certain information and footnotes required for complete financial statements under GAAP have been condensed or omitted pursuant to SEC rules and regulations. These condensed consolidated financial statements should be read in conjunction with the December 31, 2016 audited consolidated financial statements and notes thereto included in CVR's Annual Report on Form 10-K for the year ended December 31, 2016, which was filed with the SEC on February 21, 2017 (the "2016 Form 10-K").

According to the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 810, *Consolidations*, the primary beneficiary of a variable interest entity's ("VIE") activities is required to consolidate the VIE; the primary beneficiary is identified as the enterprise that has a) the power to direct the activities of the VIE that most significantly impact the entity's economic performance and b) the obligation to absorb losses of the entity that could potentially be significant to the VIE or the right to receive benefits from the entity that could potentially be significant to the VIE; limited partnerships and other similar entities are considered a VIE unless the limited partners hold substantive kick-out rights or participating rights; and an ongoing analysis is required to determine whether the variable interest gives rise to a controlling financial interest in the VIE, among other things. Management has determined that the Refining Partnership and the Nitrogen Fertilizer Partnership are VIEs because the limited partners of CVR Refining and CVR Partners lack both substantive kick-out rights and participating rights. Based upon the general partner's roles and rights as afforded by the partnership agreements and its exposure to losses and benefits of each of the partnerships through its significant limited partner interests, intercompany credit facilities, and services agreements, CVR determined that it is the primary beneficiary of both the Refining Partnership and the Nitrogen Fertilizer Partnership. Based upon that determination, CVR consolidates both the Refining and Nitrogen Fertilizer Partnerships in its consolidated financial statements.

In the opinion of the Company's management, the accompanying condensed consolidated financial statements reflect all adjustments (consisting only of normal recurring adjustments) that are necessary to fairly present the financial position of the Company as of September 30, 2017 and December 31, 2016, the results of operations and comprehensive income for the three and nine month periods ended September 30, 2017 and 2016, changes in equity for the nine month period ended September 30, 2017 and cash flows of the Company for the nine month periods ended September 30, 2017 and 2016.

The preparation of the condensed consolidated financial statements in conformity with GAAP requires management to make certain estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and the disclosure of contingent assets and liabilities. Actual results could differ from those estimates. Results of operations and cash flows for the interim periods presented are not necessarily indicative of the results that will be realized for the year ending December 31, 2017 or any other interim or annual period.

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(2) Recent Accounting Pronouncements

In May 2014, the FASB issued Accounting Standards Update ("ASU") No. 2014-09, creating a new topic, FASB ASC Topic 606, "*Revenue from Contracts with Customers*," which supersedes revenue recognition requirements in FASB ASC Topic 605, "*Revenue Recognition*." This ASU requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. In addition, an entity is required to disclose sufficient information to enable users of financial statements to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. The standard is effective for interim and annual periods beginning after December 15, 2017. The Company will adopt this standard as of January 1, 2018 using the modified retrospective application method, whereby the cumulative effect of initially applying the standard is recognized, if applicable, as an adjustment to the opening balance of retained deficit. The guidance will be applied prospectively and revenues reported in the periods prior to the date of adoption will not be changed. The Company is executing its implementation plan to adopt the new standard and is currently finalizing the assessment phase of the plan, after which the Company will complete the design and implementation phases of the plan, which will include implementing any changes to existing business processes, internal controls and systems to accommodate the new standard. During the assessment phase, the Company has reviewed the majority of its existing revenue streams, including an evaluation of accounting policies, contract reviews, identification of the type of arrangement where differences may arise in the conversion to the new standard, identification of practical expedients to be elected and additional disclosure requirements. The Company is still evaluating certain revenue streams and contracts and potential balance sheet presentation differences to determine the impact, if any, on the consolidated financial statements and related disclosures. To date, the Company has not identified any material differences in its existing revenue recognition methods that would require modification under the new standard.

In February 2016, the FASB issued ASU No. 2016-02, "*Leases*" ("ASU 2016-02"), creating a new topic, FASB ASC Topic 842, "*Leases*," which supersedes lease requirements in FASB ASC Topic 840, "*Leases*." The new standard revises accounting for operating leases by a lessee, among other changes, and requires a lessee to recognize a liability to make lease payments and an asset representing its right to use the underlying asset for the lease term in the balance sheet. The standard is effective for the first interim and annual periods beginning after December 15, 2018, with early adoption permitted. At adoption, ASU 2016-02 will be applied using a modified retrospective application method. The Company is formulating an assessment and implementation plan to adopt the new standard. The Company expects its assessment and implementation plan to be ongoing during 2017 and 2018 and is currently unable to reasonably estimate the impact of adopting the new leases standard on its consolidated financial statements and related disclosures.

In January 2017, the FASB issued ASU No. 2017-04, "*Intangibles-Goodwill and Other (Topic 350) - Simplifying the Test for Goodwill Impairment*" ("ASU 2017-04"). The new standard simplifies the accounting for goodwill impairments by eliminating step 2 from the goodwill quantitative impairment test. Instead, if the carrying amount of a reporting unit exceeds its fair value, an impairment loss shall be recognized in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit. The standard is effective for interim and annual periods beginning after December 15, 2019 and early adoption is permitted. The Company early adopted ASU 2017-04 on January 1, 2017.

(3) Acquisition

On April 1, 2016, the Nitrogen Fertilizer Partnership completed the merger (the "East Dubuque Merger") as contemplated by the Agreement and Plan of Merger, dated as of August 9, 2015 (the "Merger Agreement"), with CVR Nitrogen, LP ("CVR Nitrogen") (formerly known as East Dubuque Nitrogen Partners, L.P. and also formerly known as Rentech Nitrogen Partners, L.P.) and with CVR Nitrogen GP, LLC ("CVR Nitrogen GP") (formerly known as East Dubuque Nitrogen GP, LLC and also formerly known as Rentech Nitrogen GP, LLC) whereby the Nitrogen Fertilizer Partnership acquired a nitrogen fertilizer manufacturing facility in East Dubuque, Illinois (the "East Dubuque Facility"). Under the terms of the Merger Agreement, holders of CVR Nitrogen common units eligible to receive consideration received 1.04 common units representing limited partner interests in CVR Partners and \$2.57 in cash, without interest, for each CVR Nitrogen common unit. Pursuant to the Merger Agreement, CVR Partners issued approximately 40.2 million CVR Partners common units and paid approximately \$99.2 million in cash consideration to CVR Nitrogen common unit holders and certain holders of CVR Nitrogen phantom units.

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The aggregate merger consideration was approximately \$802.4 million, including the fair value of CVR Partners common units issued of \$335.7 million, cash consideration of \$99.2 million, and \$367.5 million fair value of assumed debt. During the three and nine months ended September 30, 2016, the Nitrogen Fertilizer Partnership incurred approximately \$0.7 million and \$3.1 million, respectively, of legal and other professional fees and other merger related expenses, which were included in selling, general and administrative expenses (exclusive of depreciation and amortization).

CVR Nitrogen's debt arrangements that remained in place after the closing date of the East Dubuque Merger included \$320.0 million of its 6.5% notes due 2021 (the "2021 Notes"). The substantial majority of the 2021 Notes were repurchased in June 2016.

Immediately prior to the East Dubuque Merger, CVR Nitrogen also had outstanding balances under a credit agreement with Wells Fargo Bank, National Association, as successor-in-interest by assignment from General Electric Company, as administrative agent (the "Wells Fargo Credit Agreement"). In connection with the closing of the East Dubuque Merger, the Nitrogen Fertilizer Partnership paid \$49.4 million for the outstanding balance, accrued interest and fees under the Wells Fargo Credit Agreement and the Wells Fargo Credit Agreement was terminated.

Parent Affiliate Units

In March 2016, CVR Energy purchased 400,000 CVR Nitrogen common units, representing approximately 1% of the then outstanding CVR Nitrogen limited partner interests. CVR Energy did not receive merger consideration for these designated CVR Nitrogen common units. Subsequent to the East Dubuque Merger, the Nitrogen Fertilizer Partnership purchased the 400,000 CVR Nitrogen common units from CVR Energy during the second quarter of 2016 for \$5.0 million.

(4) Share-Based Compensation

Long-Term Incentive Plan – CVR Energy

CVR has a Long-Term Incentive Plan ("LTIP") that permits the grant of options, stock appreciation rights, restricted shares, restricted stock units, dividend equivalent rights, share awards and performance awards (including performance share units, performance units and performance-based restricted stock). As of September 30, 2017, only grants of performance units under the LTIP remain outstanding. Individuals who are eligible to receive awards and grants under the LTIP include the Company's employees, officers, consultants, advisors and directors. The LTIP authorizes a share pool of 7,500,000 shares of the Company's common stock, 1,000,000 of which may be issued in respect of incentive stock options.

Performance Unit Awards

In December 2016, the Company entered into a performance unit award agreement (the "2016 Performance Unit Award Agreement") with its Chief Executive Officer. Compensation cost for the 2016 Performance Unit Award Agreement will be recognized over the performance cycle from January 1, 2017 to December 31, 2017. The performance unit award of 3,500 performance units under the 2016 Performance Unit Award Agreement represents the right to receive, upon vesting, a cash payment equal to \$1,000 multiplied by the applicable performance factor. The amount paid pursuant to the award, if any, will be paid following the end of the performance cycle for the award, but no later than March 6, 2018. In December 2015, the Company entered into a performance unit award agreement with its Chief Executive Officer with terms substantially the same as the 2016 Performance Unit Award Agreement and with a performance cycle from January 1, 2016 to December 31, 2016. Total compensation expense for each of the three months ended September 30, 2017 and 2016 related to the performance unit awards was approximately \$0.9 million. Total compensation expense for the nine months ended September 30, 2017 and 2016 related to the performance unit awards was approximately \$2.7 million and \$2.6 million, respectively. As of September 30, 2017 and December 31, 2016, the Company had a liability of \$2.7 million and \$3.5 million, respectively, for the performance unit awards, which is recorded in personnel accruals on the Condensed Consolidated Balance Sheets.

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Long-Term Incentive Plan – CVR Partners

CVR Partners has a long-term incentive plan ("CVR Partners LTIP") that provides for the grant of options, unit appreciation rights, distribution equivalent rights, restricted units, phantom units and other unit-based awards, each in respect of common units. Individuals eligible to receive awards pursuant to the CVR Partners LTIP include (i) employees of the Nitrogen Fertilizer Partnership and its subsidiaries, (ii) employees of its general partner, (iii) members of its board of directors of the general partner, and (iv) certain employees, consultants and directors of CVR Energy who perform services for the benefit of the Nitrogen Fertilizer Partnership.

Through the CVR Partners LTIP, phantom unit awards outstanding include awards granted to employees of both CVR Partners and its general partner. Phantom unit awards made to employees of its general partner are considered non-employee equity based-awards. The phantom unit awards outstanding vest over a three-year period. The maximum number of common units issuable under the CVR Partners LTIP is 5,000,000. As of September 30, 2017, there were 4,820,215 common units available for issuance under the CVR Partners LTIP. As all phantom unit awards discussed below are cash settled awards, they do not reduce the number of common units available for issuance.

Each phantom unit and distribution equivalent right represents the right to receive, upon vesting, a cash payment equal to (i) the average fair market value of one unit of the Nitrogen Fertilizer Partnership's common units in accordance with the award agreement, plus (ii) the per unit cash value of all distributions declared and paid by the Nitrogen Fertilizer Partnership from the grant date to and including the vesting date. The awards, which are liability-classified, will be remeasured at each subsequent reporting date until they vest. The phantom unit awards are generally graded vesting awards, which are expected to vest over three years with one-third of each award vesting each year. Compensation expense is recognized on a straight-line basis over the vesting period of the respective tranche of the award.

A summary of the phantom unit activity and changes under the CVR Partners LTIP during the nine months ended September 30, 2017 is presented below:

	Phantom Units	Weighted-Average Grant- Date Fair Value
Non-vested at January 1, 2017	771,786	\$ 6.47
Granted	3,172	4.73
Vested	(7,333)	8.03
Forfeited	(23,222)	6.49
Non-vested at September 30, 2017	744,403	\$ 6.45

As of September 30, 2017, unrecognized compensation expense associated with the unvested phantom units was approximately \$1.0 million and is expected to be recognized over a weighted-average period of 1.0 year. Compensation expense (benefit) recorded for the three months ended September 30, 2017 and 2016 related to the awards under the CVR Partners LTIP was approximately \$0.3 million of expense and \$0.2 million of benefit, respectively. Compensation expense recorded for the nine months ended September 30, 2017 and 2016 related to the awards under the CVR Partners LTIP was approximately \$0.7 million and \$1.2 million, respectively.

As of September 30, 2017 and December 31, 2016, CVR Partners had a liability of \$1.6 million and \$1.0 million, respectively, for cash settled non-vested phantom unit awards and associated distribution equivalent rights, which is recorded in personnel accruals on the Condensed Consolidated Balance Sheets.

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Long-Term Incentive Plan – CVR Refining

CVR Refining has a long-term incentive plan ("CVR Refining LTIP") that provides for the grant of options, unit appreciation rights, restricted units, phantom units, unit awards, substitute awards, other-unit based awards, cash awards, performance awards, and distribution equivalent rights, each in respect of common units. The maximum number of common units issuable under the CVR Refining LTIP is 11,070,000. Individuals who are eligible to receive awards under the CVR Refining LTIP include (i) employees of the Refining Partnership and its subsidiaries, (ii) employees of the general partner, (iii) members of the board of directors of the general partner and (iv) certain employees, consultants and directors of CRLLC and CVR Energy who perform services for the benefit of the Refining Partnership.

Awards of phantom units and distribution equivalent rights have been granted to employees of the Refining Partnership and its subsidiaries, its general partner and certain employees of CRLLC and CVR Energy who perform services solely for the benefit of the Refining Partnership. The awards are generally graded vesting awards, which are expected to vest over three years with one-third of each award vesting each year. Compensation expense is recognized on a straight-line basis over the vesting period of the respective tranche of the award. Each phantom unit and distribution equivalent right represents the right to receive, upon vesting, a cash payment equal to (i) the average fair market value of one unit of the Refining Partnership's common units in accordance with the award agreement, plus (ii) the per unit cash value of all distributions declared and paid by the Refining Partnership from the grant date to and including the vesting date. The awards, which are liability-classified, will be remeasured at each subsequent reporting date until they vest.

A summary of phantom unit activity and changes under the CVR Refining LTIP during the nine months ended September 30, 2017 is presented below:

	Phantom Units	Weighted-Average Grant- Date Fair Value
Non-vested at January 1, 2017	904,855	\$ 12.38
Granted	45,848	9.21
Vested	(6,106)	11.41
Forfeited	(67,923)	15.09
Non-vested at September 30, 2017	876,674	\$ 12.01

As of September 30, 2017, there was approximately \$4.0 million of total unrecognized compensation cost related to the awards under the CVR Refining LTIP to be recognized over a weighted-average period of 1.1 years. Total compensation expense recorded for the three months ended September 30, 2017 and 2016 related to the awards under the CVR Refining LTIP was approximately \$1.3 million and \$0.9 million, respectively. Total compensation expense recorded for the nine months ended September 30, 2017 and 2016 related to the awards under the CVR Refining LTIP was approximately \$3.5 million and \$0.9 million, respectively.

As of September 30, 2017 and December 31, 2016, the Refining Partnership had a liability of approximately \$4.9 million and \$1.5 million, respectively, for non-vested phantom unit awards and associated distribution equivalent rights, which is recorded in personnel accruals on the Condensed Consolidated Balance Sheets.

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Incentive Unit Awards

The Company granted awards of incentive units and distribution equivalent rights to certain employees of CRLLC, CVR Energy and CVR GP, LLC. The awards are generally graded vesting awards, which are expected to vest over three years with one-third of each award vesting each year. Compensation expense is recognized on a straight-line basis over the vesting period of the respective tranche of the award. Each incentive unit and distribution equivalent right represents the right to receive, upon vesting, a cash payment equal to (i) the average fair market value of one unit of the Refining Partnership's common units in accordance with the award agreement, plus (ii) the per unit cash value of all distributions declared and paid by the Refining Partnership from the grant date to and including the vesting date. The awards, which are liability-classified, will be remeasured at each subsequent reporting date until they vest.

A summary of incentive unit activity and changes during the nine months ended September 30, 2017 is presented below:

	Incentive Units	Weighted-Average Grant-Date Fair Value
Non-vested at January 1, 2017	987,797	\$ 12.63
Granted	9,535	9.96
Vested	(20,123)	15.79
Forfeited	(151,346)	12.75
Non-vested at September 30, 2017	825,863	\$ 12.5

As of September 30, 2017, there was approximately \$3.5 million of total unrecognized compensation cost related to incentive unit awards to be recognized over a weighted-average period of approximately 1.0 year. Total compensation expense for the three months ended September 30, 2017 and 2016 related to the awards was approximately \$0.7 million and \$1.0 million, respectively. Total compensation expense for the nine months ended September 30, 2017 and 2016 related to the awards was approximately \$3.2 million and \$1.1 million, respectively.

As of September 30, 2017 and December 31, 2016, the Company had a liability of approximately \$4.9 million and \$1.9 million, respectively, for non-vested incentive units and associated distribution equivalent rights, which is recorded in personnel accruals on the Condensed Consolidated Balance Sheets.

(5) Inventories

Inventories consist primarily of domestic and foreign crude oil, blending stock and components, work-in-progress, fertilizer products, and refined fuels and by-products. For all periods presented, inventories are valued at the lower of the first-in, first-out ("FIFO") cost or net realizable value for fertilizer products, refined fuels and by-products. Refinery unfinished and finished products inventory values were determined using the ability-to-bear process, whereby raw materials and production costs are allocated to work-in-process and finished products based on their relative fair values. Other inventories, including other raw materials, spare parts, and supplies, are valued at the lower of moving-average cost, which approximates FIFO, or net realizable value. The cost of inventories includes inbound freight costs.

Inventories consisted of the following:

	September 30, 2017	December 31, 2016
	(in millions)	
Finished goods	\$ 141.2	\$ 151.7
Raw materials and precious metals	100.3	98.4
In-process inventories	20.9	23.9
Parts and supplies	77.3	75.2
Total Inventories	\$ 339.7	\$ 349.2

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(6) Property, Plant and Equipment

Property, plant and equipment consisted of the following:

	September 30, 2017	December 31, 2016
	(in millions)	
Land and improvements	\$ 47.0	\$ 46.5
Buildings	83.7	64.8
Machinery and equipment	3,686.0	3,656.5
Automotive equipment	25.1	24.7
Furniture and fixtures	31.1	28.9
Leasehold improvements	4.7	3.6
Aircraft	3.6	3.6
Railcars	16.8	16.8
Construction in progress	69.3	54.2
	<u>3,967.3</u>	<u>3,899.6</u>
Accumulated depreciation	1,380.8	1,227.5
Total property, plant and equipment, net	<u>\$ 2,586.5</u>	<u>\$ 2,672.1</u>

Capitalized interest recognized as a reduction in interest expense for the three months ended September 30, 2017 and 2016 totaled approximately \$0.3 million and \$1.6 million, respectively. Capitalized interest recognized as a reduction in interest expense for the nine months ended September 30, 2017 and 2016 totaled approximately \$0.8 million and \$5.0 million, respectively. Land, buildings and equipment that are under a capital lease obligation had an original carrying value of approximately \$24.8 million at both September 30, 2017 and December 31, 2016. Amortization of assets held under capital leases is included in depreciation expense.

(7) Goodwill

The Nitrogen Fertilizer Partnership evaluates the carrying value of goodwill annually as of November 1 and between annual evaluations if events occur or circumstances change that would more likely than not reduce the fair value of the reporting unit below its carrying amount. The Nitrogen Fertilizer Partnership's goodwill reporting unit is the Coffeyville Facility.

Based on a significant decline in market capitalization and lower cash flow forecasts resulting from weakened fertilizer pricing trends that occurred during the third quarter of 2017, the Nitrogen Fertilizer Partnership identified a triggering event and therefore performed an interim goodwill impairment test as of August 31, 2017. The quantitative goodwill impairment analysis compares the fair value of the reporting unit to its carrying value. The Coffeyville Facility reporting unit fair value is based upon consideration of various valuation methodologies, including guideline public company multiples and projected future cash flows discounted at rates commensurate with the risk involved. The carrying amount of the reporting unit was less than its fair value; therefore, no impairment was recorded.

The fair value of the reporting unit exceeded its carrying value by approximately 12% based upon the results of the interim goodwill impairment test as of August 31, 2017. Judgments and assumptions are inherent in management's estimates used to determine the fair value of the reporting unit. Assumptions used in the discounted cash flows ("DCF") included estimating appropriate discount rates and growth rates and estimating the amount and timing of expected future cash flows. The discount rates used in the DCF, which are intended to reflect the risks inherent in future cash flow projections, are based on estimates of the weighted-average cost of capital of a market participant. Such estimates are derived from analysis of peer companies and consider the industry weighted average return on debt and equity from a market participant perspective. The most significant assumption to determining the fair value of the reporting unit was forecasted fertilizer pricing. Changes in assumptions may result in a change in management's estimates and may result in an impairment in future periods, including, but not limited to, further declines in the forecasted fertilizer pricing. The Nitrogen Fertilizer Partnership also calculated fair value estimates derived from the market approach utilizing the public company market multiple method, which required assumptions about the applicability of those multiples to the Coffeyville Facility reporting unit.

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(8) Cost Classifications

Cost of materials and other includes cost of crude oil, other feedstocks, blendstocks, purchased refined products, pet coke, renewable identification numbers ("RINs") and transportation and distribution expenses.

Direct operating expenses (exclusive of depreciation and amortization) include direct costs of labor, maintenance and services, energy and utility costs, property taxes, environmental compliance costs, as well as chemicals and catalysts and other direct operating expenses. Direct operating expenses exclude depreciation and amortization of approximately \$51.3 million and \$48.1 million, for the three months ended September 30, 2017 and 2016, respectively. For the nine months ended September 30, 2017 and 2016, direct operating expenses exclude depreciation and amortization of approximately \$151.7 million and \$134.5 million, respectively.

Selling, general and administrative expenses (exclusive of depreciation and amortization) consist primarily of expenses for legal, treasury, accounting, marketing, human resources, information technology and maintaining the corporate and administrative offices in Texas and Kansas. Selling, general and administrative expenses exclude depreciation and amortization of approximately \$2.8 million and \$2.0 million, for the three months ended September 30, 2017 and 2016, respectively. For the nine months ended September 30, 2017 and 2016, selling, general and administrative expenses exclude depreciation and amortization of approximately \$7.5 million and \$6.3 million, respectively.

(9) Income Taxes

CVR is a member of the consolidated federal tax group of American Entertainment Properties Corporation ("AEPC"), an affiliate of IEP, and is party to a tax allocation agreement with AEPC (the "Tax Allocation Agreement"). The Tax Allocation Agreement provides that AEPC will pay all consolidated federal income taxes on behalf of the consolidated tax group. CVR is required to make payments to AEPC in an amount equal to the tax liability, if any, that it would have paid if it were to file as a consolidated group separate and apart from AEPC. As of September 30, 2017, the Company's Condensed Consolidated Balance Sheet reflected a payable of \$2.6 million for federal income taxes due to AEPC. During the three months ended September 30, 2017 and 2016, the Company paid \$0.0 million and \$15.0 million, respectively, to AEPC under the Tax Allocation Agreement. During the nine months ended September 30, 2017 and 2016, the Company paid \$10.0 million and \$15.0 million, respectively, to AEPC under the Tax Allocation Agreement.

The Company recognizes liabilities, interest and penalties for potential tax issues based on its estimate of whether, and the extent to which, additional taxes may be due as determined under FASB ASC Topic 740 — *Income Taxes*. As of September 30, 2017, the Company had unrecognized tax benefits of approximately \$44.1 million, of which \$28.7 million, if recognized, would impact the Company's effective tax rate. Approximately \$25.7 million of unrecognized tax benefits were netted with deferred tax asset carryforwards. The remaining unrecognized tax benefits are included in other long-term liabilities in the Condensed Consolidated Balance Sheets. The Company has accrued interest of \$10.1 million related to uncertain tax positions. The Company's accounting policy with respect to interest and penalties related to tax uncertainties is to classify these amounts as income taxes.

The Company's effective tax rate for the three and nine months ended September 30, 2017 was 26.7% and 28.2%, respectively, and the Company's effective tax rate for the three and nine months ended September 30, 2016 was 55.6% and 13.3%, respectively as compared to the Company's combined federal and state expected statutory tax rate of 39.3% and 39.4% for each of the three and nine months ended September 30, 2017 and 2016, respectively. The Company's effective tax rate for the three and nine months ended September 30, 2017 and 2016 varies from the statutory rate primarily due to the reduction of income subject to tax associated with the noncontrolling ownership interests of CVR Refining's and CVR Partners' earnings (loss), as well as benefits for domestic production activities and state income tax credits. The effective tax rate for the nine months ended September 30, 2017 varies from the nine months ended September 30, 2016 due to the realization of certain state benefits compared to the projected pre-tax loss for the period ended September 30, 2016.

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(10) Long-Term Debt

Long-term debt consisted of the following:

	September 30, 2017	December 31, 2016
	(in millions)	
6.5% Senior Notes due 2022	\$ 500.0	\$ 500.0
9.25% Senior Secured Notes due 2023	645.0	645.0
6.5% Senior Notes due 2021	2.2	2.2
Capital lease obligations	45.5	46.9
Total debt	1,192.7	1,194.1
Unamortized debt issuance cost	(12.7)	(14.2)
Unamortized debt discount	(13.9)	(15.3)
Current portion of capital lease obligations	(2.0)	(1.8)
Long-term debt, net of current portion	\$ 1,164.1	\$ 1,162.8

2022 Senior Notes

The Refining Partnership has \$500.0 million aggregate principal amount of 6.5% Senior Notes due 2022 (the "2022 Notes") outstanding, which were issued on October 23, 2012. The 2022 Notes were issued at par and mature on November 1, 2022, unless earlier redeemed or repurchased by the issuers. Interest is payable on the 2022 Notes semi-annually on May 1 and November 1 of each year, commencing on May 1, 2013.

The 2022 Notes contain customary covenants for a financing of this type that limit, subject to certain exceptions, the incurrence of additional indebtedness or guarantees, the creation of liens on assets, the ability to dispose of assets, the ability to make certain payments on contractually subordinated debt, the ability to merge, consolidate with or into another entity and the ability to enter into certain affiliate transactions. The 2022 Notes provide that the Refining Partnership can make distributions to holders of its common units provided, among other things, it has a minimum fixed charge coverage ratio and there is no default or event of default under the 2022 Notes. As of September 30, 2017, the Refining Partnership was in compliance with the covenants contained in the 2022 Notes.

At September 30, 2017, the estimated fair value of the 2022 Notes was approximately \$510.0 million. This estimate of fair value is Level 2 as it was determined by quotations obtained from a broker-dealer who makes a market in these and similar securities.

Amended and Restated Asset Based (ABL) Credit Facility

The Refining Partnership has a senior secured asset based revolving credit facility (the "Amended and Restated ABL Credit Facility") with an aggregate principal amount of up to \$400.0 million with an incremental facility, which permits an increase in borrowings of up to \$200.0 million subject to receipt of additional lender commitments and certain other conditions. The Amended and Restated ABL Credit Facility is scheduled to mature on December 20, 2017. The Refining Partnership is in the process of negotiating an amendment to the Amended and Restated ABL Credit Facility to extend the facility and expects to finalize an agreement in November 2017.

The Amended and Restated ABL Credit Facility also contains customary covenants for a financing of this type that limit the ability of the Refining Partnership and its subsidiaries to, among other things, incur liens, engage in a consolidation, merger, purchase or sale of assets, pay dividends, incur indebtedness, make advances, investments and loans, enter into affiliate transactions, issue equity interests or create subsidiaries and unrestricted subsidiaries. The Amended and Restated ABL Credit Facility also contains a fixed charge coverage ratio financial covenant, as defined therein. The Refining Partnership was in compliance with the covenants of the Amended and Restated ABL Credit Facility as of September 30, 2017.

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As of September 30, 2017, the Refining Partnership and its subsidiaries had availability under the Amended and Restated ABL Credit Facility of \$371.6 million and had letters of credit outstanding of approximately \$28.4 million. There were no borrowings outstanding under the Amended and Restated ABL Credit Facility as of September 30, 2017. Availability under the Amended and Restated ABL Credit Facility was limited by borrowing base conditions as of September 30, 2017.

Nitrogen Fertilizer Partnership Credit Facility

On April 13, 2011, Nitrogen Fertilizer Partnership entered into a credit facility with a group of lenders including Goldman Sachs Lending Partners LLC, as administrative and collateral agent (the "Credit Agreement"). The Credit Agreement included a term loan facility of \$125.0 million and a revolving credit facility of \$25.0 million with an uncommitted incremental facility of up to \$50.0 million. At March 31, 2016, the effective rate of the term loan was approximately 3.98%. On April 1, 2016, the Nitrogen Fertilizer Partnership repaid all amounts outstanding under the Credit Agreement and the Credit Agreement was terminated.

2023 Senior Notes

On June 10, 2016, CVR Partners and CVR Nitrogen Finance Corporation ("CVR Nitrogen Finance"), an indirect wholly-owned subsidiary of CVR Partners (together the "2023 Notes Issuers"), certain subsidiary guarantors named therein and Wilmington Trust, National Association, as trustee and as collateral trustee, completed a private offering of \$645.0 million aggregate principal amount of 9.25% Senior Secured Notes due 2023 (the "2023 Notes"). The 2023 Notes mature on June 15, 2023, unless earlier redeemed or repurchased by the issuers. Interest on the 2023 Notes is payable semi-annually in arrears on June 15 and December 15 of each year. The 2023 Notes are guaranteed on a senior secured basis by all of the Nitrogen Fertilizer Partnership's existing subsidiaries.

The 2023 Notes contain customary covenants for a financing of this type that, among other things, restrict the Nitrogen Fertilizer Partnership's ability and the ability of certain of its subsidiaries to: (i) sell assets; (ii) pay distributions on, redeem or repurchase the Nitrogen Fertilizer Partnership's units or redeem or repurchase its subordinated debt; (iii) make investments; (iv) incur or guarantee additional indebtedness or issue preferred units; (v) create or incur certain liens; (vi) enter into agreements that restrict distributions or other payments from the Nitrogen Fertilizer Partnership's restricted subsidiaries to the Nitrogen Fertilizer Partnership; (vii) consolidate, merge or transfer all or substantially all of the Nitrogen Fertilizer Partnership's assets; (viii) engage in transactions with affiliates; and (ix) create unrestricted subsidiaries.

The indenture governing the 2023 Notes prohibits the Nitrogen Fertilizer Partnership from making distributions to unitholders if any default or event of default (as defined in the indenture) exists. In addition, the indenture limits the Nitrogen Fertilizer Partnership's ability to pay distributions to unitholders. The covenants will apply differently depending on the Nitrogen Fertilizer Partnership's fixed charge coverage ratio (as defined in the indenture). If the fixed charge coverage ratio is not less than 1.75 to 1.0, the Nitrogen Fertilizer Partnership will generally be permitted to make restricted payments, including distributions to its unitholders, without substantive restriction. If the fixed charge coverage ratio is less than 1.75 to 1.0, the Nitrogen Fertilizer Partnership will generally be permitted to make restricted payments, including distributions to its unitholders, up to an aggregate \$75.0 million basket plus certain other amounts referred to as "incremental funds" under the indenture. As of September 30, 2017, the ratio was less than 1.75 to 1.0. Restricted payments have been made, and \$72.7 million of the basket was available as of September 30, 2017. As of September 30, 2017, the Nitrogen Fertilizer Partnership was in compliance with the covenants contained in the 2023 Notes.

Included in other current liabilities on the Condensed Consolidated Balance Sheets is accrued interest payable totaling approximately \$17.6 million and \$2.7 million, respectively, as of September 30, 2017 and December 31, 2016 related to the 2023 Notes. At September 30, 2017, the estimated fair value of the 2023 Notes was approximately \$686.9 million. This estimate of fair value is Level 2 as it was determined by quotations obtained from a broker-dealer who makes a market in these and similar securities.

2021 Notes

Prior to the East Dubuque Merger, CVR Nitrogen and CVR Nitrogen Finance Corporation issued \$320.0 million of 6.5% senior notes due 2021 (the "2021 Notes"). The 2021 Notes bear interest at a rate of 6.5% per annum, payable semi-annually in arrears on April 15 and October 15 of each year. The 2021 Notes are scheduled to mature on April 15, 2021, unless repurchased or redeemed earlier in accordance with their terms. The substantial majority of the 2021 Notes were repurchased in 2016. During the

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nine months ended September 30, 2016, the Nitrogen Fertilizer Partnership recognized a loss on debt extinguishment of \$5.1 million. As of September 30, 2017 and December 31, 2016, \$2.2 million of principal amount of the 2021 Notes remained outstanding and accrued interest was nominal.

Capital Lease Obligations

The Refining Partnership maintains two leases, accounted for as a capital lease and a finance obligation, related to Magellan Pipeline Terminals, L.P. ("Magellan Pipeline") and Excel Pipeline LLC ("Excel Pipeline"). The underlying assets and related depreciation are included in property, plant and equipment. The capital lease, which relates to a sales-lease back agreement with Sunoco Pipeline, L.P. for its membership interest in the Excel Pipeline, has 145 months remaining of its term and will expire in September 2029. The financing agreement, which relates to the Magellan Pipeline terminals, bulk terminal and loading facility, has a lease term with 144 months remaining and will expire in September 2029.

Asset Based (ABL) Credit Facility

On September 30, 2016, the Nitrogen Fertilizer Partnership entered into a senior secured asset based revolving credit facility (the "ABL Credit Facility") with a group of lenders and UBS AG, Stamford Branch ("UBS"), as administrative agent and collateral agent. The ABL Credit Facility has an aggregate principal amount of availability of up to \$50.0 million with an incremental facility, which permits an increase in borrowings of up to \$25.0 million in the aggregate subject to additional lender commitments and certain other conditions. The ABL Credit Facility is scheduled to mature on September 30, 2021.

At the option of the borrowers, loans under the ABL Credit Facility initially bear interest at an annual rate equal to (i) 2.0% plus London Interbank Offered Rate ("LIBOR") or (ii) 1.0% plus a base rate, subject to a 0.5% step-down based on the previous quarter's excess availability. The borrowers must also pay a commitment fee on the unutilized commitments and also pay customary letter of credit fees.

The ABL Credit Facility also contains customary covenants for a financing of this type that limit the ability of the Nitrogen Fertilizer Partnership and its subsidiaries to, among other things, incur liens, engage in a consolidation, merger, purchase or sale of assets, pay dividends, incur indebtedness, make advances, investments and loans, enter into affiliate transactions, issue equity interests or create subsidiaries and unrestricted subsidiaries. The ABL Credit Facility also contains a fixed charge coverage ratio financial covenant, as defined therein. The Nitrogen Fertilizer Partnership was in compliance with the covenants of the ABL Credit Facility as of September 30, 2017.

As of September 30, 2017, the Nitrogen Fertilizer Partnership and its subsidiaries had availability under the ABL Credit Facility of \$47.6 million. There were no borrowings outstanding under the ABL Credit Facility as of September 30, 2017.

(11) Earnings Per Share

Basic and diluted earnings per share are computed by dividing net income attributable to CVR stockholders by the weighted-average number of shares of common stock outstanding. The components of the basic and diluted earnings per share calculation are as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
	(in millions, except per share data)			
Net income attributable to CVR Energy stockholders	\$ 22.2	\$ 5.4	\$ 33.9	\$ 17.6
Weighted-average shares of common stock outstanding - Basic and diluted	86.8	86.8	86.8	86.8
Basic and diluted earnings per share	\$ 0.26	\$ 0.06	\$ 0.39	\$ 0.20

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There were no dilutive awards outstanding during the three and nine months ended September 30, 2017 and 2016, as all unvested awards under the LTIP were liability-classified awards. See Note 4 ("Share-Based Compensation").

(12) Commitments and Contingencies

Leases and Unconditional Purchase Obligations

The minimum required payments for CVR's operating lease agreements and unconditional purchase obligations are as follows:

	Operating Leases	Unconditional Purchase Obligations ⁽¹⁾
	(in millions)	
Three Months Ending December 31, 2017	\$ 1.9	\$ 127.7
<u>Year Ending December 31,</u>		
2018	6.9	141.2
2019	6.0	129.7
2020	5.4	112.1
2021	5.2	101.3
Thereafter	7.2	659.7
	<u>\$ 32.6</u>	<u>\$ 1,271.7</u>

- (1) This amount includes approximately \$708.6 million payable ratably over 14 years pursuant to petroleum transportation service agreements between Coffeyville Resources Refining & Marketing, LLC ("CRRM") and each of TransCanada Keystone Pipeline Limited Partnership and TransCanada Keystone Pipeline, LP (together, "TransCanada"). The purchase obligation reflects the exchange rate between the Canadian dollar and the U.S. dollar as of September 30, 2017, where applicable. Under the agreements, CRRM receives transportation of at least 25,000 barrels per day of crude oil with a delivery point at Cushing, Oklahoma for a term of 20 years on TransCanada's Keystone pipeline system.

CVR leases various equipment, including railcars and real properties, under long-term operating leases expiring at various dates through 2035. For the three months ended September 30, 2017 and 2016, lease expense totaled approximately \$1.9 million and \$2.0 million, respectively. For the nine months ended September 30, 2017 and 2016, lease expense totaled approximately \$5.7 million and \$6.2 million, respectively. The lease agreements have various remaining terms. Some agreements are renewable, at CVR's option, for additional periods. It is expected, in the ordinary course of business, that leases will be renewed or replaced as they expire.

Additionally, in the normal course of business, the Company has long-term commitments to purchase oxygen, nitrogen, electricity, storage capacity, water and pipeline transportation services. For the three months ended September 30, 2017 and 2016, total expense of approximately \$49.5 million and \$33.4 million, respectively, was incurred related to long-term commitments. For the nine months ended September 30, 2017 and 2016, total expense of approximately \$157.3 million and \$103.3 million, respectively, was incurred related to long-term commitments.

Crude Oil Supply Agreement

On August 31, 2012, CRRM and Vitol Inc. ("Vitol") entered into an Amended and Restated Crude Oil Supply Agreement (as amended, the "Vitol Agreement"). Under the Vitol Agreement, Vitol supplies the petroleum business with crude oil and intermediation logistics, which helps to reduce the Refining Partnership's inventory position and mitigate crude oil pricing risk. The Vitol Agreement will automatically renew for successive one-year terms (each such term, a "Renewal Term") unless either party provides the other with notice of nonrenewal at least 180 days prior to the expiration of any Renewal Term. The Vitol Agreement currently extends through December 31, 2018.

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Litigation

From time to time, the Company is involved in various lawsuits arising in the normal course of business, including matters such as those described below under, "Environmental, Health and Safety ("EHS") Matters." Liabilities related to such litigation are recognized when the related costs are probable and can be reasonably estimated. These provisions are reviewed at least quarterly and adjusted to reflect the impacts of negotiations, settlements, rulings, advice of legal counsel, and other information and events pertaining to a particular case. It is possible that management's estimates of the outcomes will change within the next year due to uncertainties inherent in litigation and settlement negotiations. There were no new proceedings or material developments in proceedings that CVR previously reported in its 2016 Form 10-K. In the opinion of management, the ultimate resolution of any other litigation matters is not expected to have a material adverse effect on the accompanying condensed consolidated financial statements. There can be no assurance that management's beliefs or opinions with respect to liability for potential litigation matters will prove to be accurate.

Environmental, Health and Safety ("EHS") Matters

The petroleum and nitrogen fertilizer businesses are subject to various stringent federal, state, and local EHS rules and regulations. Liabilities related to EHS matters are recognized when the related costs are probable and can be reasonably estimated. Estimates of these costs are based upon currently available facts, existing technology, site-specific costs and currently enacted laws and regulations. In reporting EHS liabilities, no offset is made for potential recoveries.

Except as otherwise described below, there have been no new developments or material changes to the environmental accruals or expected capital expenditures related to compliance with the environmental matters from those provided in the 2016 Form 10-K. The Company believes the petroleum and nitrogen fertilizer businesses are in material compliance with existing EHS rules and regulations. There can be no assurance that the EHS matters described or referenced herein or other EHS matters which may develop in the future will not have a material adverse effect on the Company's business, financial condition or results of operations.

At September 30, 2017, the Company's Condensed Consolidated Balance Sheets included total environmental accruals of \$3.8 million, as compared to \$4.8 million at December 31, 2016. Management periodically reviews and, as appropriate, revises its environmental accruals. Based on current information and regulatory requirements, management believes that the accruals established for environmental expenditures are adequate.

Environmental expenditures are capitalized when such expenditures are expected to result in future economic benefits. For the three months ended September 30, 2017 and 2016, capital expenditures were approximately \$4.5 million and \$6.5 million, respectively. For the nine months ended September 30, 2017 and 2016, capital expenditures were approximately \$11.5 million and \$12.5 million, respectively. These expenditures were incurred for environmental compliance and efficiency of the operations.

RINs expense for the three months ended September 30, 2017 and 2016 was \$64.3 million and \$58.3 million, respectively. RINs expense for the nine months ended September 30, 2017 and 2016 was \$163.5 million and \$152.4 million, respectively. RINs expense includes the impact of recognizing the petroleum business' uncommitted biofuel blending obligation at fair value based on market prices at each reporting date. As of September 30, 2017 and December 31, 2016, the petroleum business' biofuel blending obligation was approximately \$185.3 million and \$186.3 million, respectively, which was recorded in other current liabilities on the Condensed Consolidated Balance Sheets. The petroleum business' uncommitted biofuel blending obligation recognized at fair value as of September 30, 2017 and December 31, 2016 was approximately \$127.0 million and \$186.3 million, respectively.

Affiliate Pension Obligations

Mr. Carl C. Iahn, through certain affiliates, owns approximately 82% of the Company's capital stock. Applicable pension and tax laws make each member of a "controlled group" of entities, generally defined as entities in which there is at least an 80% common ownership interest, jointly and severally liable for certain pension plan obligations of any member of the controlled group. These pension obligations include ongoing contributions to fund the plan, as well as liability for any unfunded liabilities that may exist at the time the plan is terminated. In addition, the failure to pay these pension obligations when due may result in the creation of liens in favor of the pension plan or the Pension Benefit Guaranty Corporation ("PBGC") against the assets of each member of the controlled group.

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As a result of the more than 80% ownership interest in CVR Energy by Mr. Icahn's affiliates, the Company is subject to the pension liabilities of all entities in which Mr. Icahn has a direct or indirect ownership interest of at least 80%. Two such entities, ACF Industries LLC ("ACF") and Federal-Mogul, are the sponsors of several pension plans. All the minimum funding requirements of the Internal Revenue Code of 1986, as amended, and the Employee Retirement Income Security Act of 1974, as amended by the Pension Protection Act of 2006, for these plans have been met as of September 30, 2017 and December 31, 2016. If the ACF and Federal-Mogul plans were voluntarily terminated, they would be collectively underfunded by approximately \$451.8 million and \$613.4 million as of September 30, 2017 and December 31, 2016, respectively. These results are based on the most recent information provided by Mr. Icahn's affiliates based on information from the plans' actuaries. These liabilities could increase or decrease, depending on a number of factors, including future changes in benefits, investment returns, and the assumptions used to calculate the liability. As members of the controlled group, CVR Energy would be liable for any failure of ACF and Federal-Mogul to make ongoing pension contributions or to pay the unfunded liabilities upon a termination of their respective pension plans. In addition, other entities now or in the future within the controlled group that includes CVR Energy may have pension plan obligations that are, or may become, underfunded, and the Company would be liable for any failure of such entities to make ongoing pension contributions or to pay the unfunded liabilities upon a termination of such plans. The current underfunded status of the ACF and Federal-Mogul pension plans requires such entities to notify the PBGC of certain "reportable events," such as if CVR Energy were to cease to be a member of the controlled group, or if CVR Energy makes certain extraordinary dividends or stock redemptions. The obligation to report could cause the Company to seek to delay or reconsider the occurrence of such reportable events. Based on the contingent nature of potential exposure related to these affiliate pension obligations, no liability has been recorded in the condensed consolidated financial statements.

(13) Fair Value Measurements

In accordance with FASB ASC Topic 820 — *Fair Value Measurements and Disclosures* ("ASC 820"), the Company utilizes the market approach to measure fair value for its financial assets and liabilities. The market approach uses prices and other relevant information generated by market transactions involving identical or comparable assets, liabilities or a group of assets or liabilities, such as a business.

ASC 820 utilizes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. The following is a brief description of those three levels:

- Level 1 — Quoted prices in active markets for identical assets and liabilities
- Level 2 — Other significant observable inputs (including quoted prices in active markets for similar assets or liabilities)
- Level 3 — Significant unobservable inputs (including the Company's own assumptions in determining the fair value)

The following table sets forth the assets and liabilities measured at fair value on a recurring basis, by input level, as of September 30, 2017 and December 31, 2016:

<u>Location and Description</u>	September 30, 2017			
	Level 1	Level 2	Level 3	Total
	(in millions)			
Cash equivalents	\$ 15.8	\$ —	\$ —	\$ 15.8
Other current assets (investments)	0.1	—	—	0.1
Other current assets (other derivative agreements)	—	0.1	—	0.1
Total Assets	\$ 15.9	\$ 0.1	\$ —	\$ 16.0
Other current liabilities (other derivative agreements)	\$ —	\$ (17.2)	\$ —	\$ (17.2)
Other current liabilities (biofuel blending obligation)	\$ —	\$ (127.0)	\$ —	\$ (127.0)
Total Liabilities	\$ —	\$ (144.2)	\$ —	\$ (144.2)

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<u>Location and Description</u>	December 31, 2016			
	Level 1	Level 2	Level 3	Total
	(in millions)			
Cash equivalents	\$ 15.8	\$ —	\$ —	\$ 15.8
Other current assets (investments)	0.1	—	—	0.1
Total Assets	\$ 15.9	\$ —	\$ —	\$ 15.9
Other current liabilities (other derivative agreements)	\$ —	\$ (11.1)	\$ —	\$ (11.1)
Other long-term liabilities (biofuel blending obligation & benzene obligation)	—	(187.0)	—	(187.0)
Total Liabilities	\$ —	\$ (198.1)	\$ —	\$ (198.1)

As of September 30, 2017 and December 31, 2016, the only financial assets and liabilities that are measured at fair value on a recurring basis are the Company's cash equivalents, investments, derivative instruments and the uncommitted biofuel blending obligation and benzene obligation. Additionally, the fair value of the Company's debt issuances is disclosed in Note 10 ("Long-Term Debt").

In March 2016, CVR Energy purchased 400,000 CVR Nitrogen common units in the public market. As of March 31, 2016, the fair value of the common units was based on quoted prices for the identical securities (Level 1 inputs). As a result of the East Dubuque Merger, the carrying amount of the investment in the CVR Nitrogen common units was reclassified as an investment in consolidated subsidiary and is eliminated in consolidation. Subsequent to the East Dubuque Merger, the Nitrogen Fertilizer Partnership purchased the 400,000 CVR Nitrogen common units from CVR Energy during the second quarter of 2016.

The Refining Partnership's commodity derivative contracts and the uncommitted biofuel blending obligation and benzene obligation, which use fair value measurements and are valued using broker quoted market prices of similar instruments, are considered Level 2 inputs. The Company had no transfers of assets and liabilities between any of the above levels during the nine months ended September 30, 2017.

(14) Derivative Financial Instruments

Loss on derivatives, net and current period settlements on derivative contracts were as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
	(in millions)			
Current period settlements on derivative contracts	\$ —	\$ 6.7	\$ 1.1	\$ 35.2
Loss on derivatives, net	(17.0)	(1.7)	(4.8)	(4.8)

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The Refining Partnership and Nitrogen Fertilizer Partnership are subject to price fluctuations caused by supply conditions, weather, economic conditions, interest rate fluctuations and other factors. To manage price risk on crude oil and other inventories and to fix margins on certain future production, the Refining Partnership from time to time enters into various commodity derivative transactions.

The Refining Partnership has adopted accounting standards which impose extensive record-keeping requirements in order to designate a derivative financial instrument as a hedge. The Refining Partnership holds derivative instruments, such as exchange-traded crude oil futures and certain over-the-counter forward swap agreements, which it believes provide an economic hedge on future transactions, but such instruments are not designated as hedges for GAAP purposes. Gains or losses related to the change in fair value and periodic settlements of these derivative instruments are classified as gain (loss) on derivatives, net in the Condensed Consolidated Statements of Operations. There are no premiums paid or received at inception of the derivative contracts and upon settlement, there is no cost recovery associated with these contracts.

The Refining Partnership maintains a margin account to facilitate other commodity derivative activities. A portion of this account may include funds available for withdrawal. These funds are included in cash and cash equivalents within the Condensed Consolidated Balance Sheets. The maintenance margin balance is included within other current assets within the Condensed Consolidated Balance Sheets. Dependent upon the position of the open commodity derivatives, the amounts are accounted for as other current assets or other current liabilities within the Condensed Consolidated Balance Sheets. From time to time, the Refining Partnership may be required to deposit additional funds into this margin account. There were no open commodity positions as of September 30, 2017. For both the three months ended September 30, 2017 and 2016, the Refining Partnership recognized a nominal net gain. For the nine months ended September 30, 2017 and 2016, the Refining Partnership recognized net losses of \$0.1 million and \$0.4 million, respectively, which are recorded in loss on derivatives, net in the Condensed Consolidated Statements of Operations.

Commodity Swaps

The Refining Partnership enters into commodity swap contracts in order to fix the margin on a portion of future production. Additionally, the Refining Partnership may enter into price and basis swaps in order to fix the price on a portion of its commodity purchases and product sales. The physical volumes are not exchanged and these contracts are net settled with cash. The contract fair value of the commodity swaps is reflected on the Condensed Consolidated Balance Sheets with changes in fair value currently recognized in the Condensed Consolidated Statements of Operations. Quoted prices for similar assets or liabilities in active markets (Level 2) are considered to determine the fair values for the purpose of marking to market the hedging instruments at each period end. At December 31, 2016, the Refining Partnership had open commodity swap instruments consisting of 4.0 million barrels of crack spreads, primarily to fix the margin on a portion of its future gasoline and distillate production. At September 30, 2017, the Refining Partnership had open commodity swap instruments consisting of 6.4 million barrels of 2-1-1 crack spreads, 4.9 million barrels of distillate crack spreads and 4.9 million barrels of gasoline crack spreads. For the three months ended September 30, 2017 and 2016, the Refining Partnership recognized net losses of \$17.0 million and \$1.7 million, respectively. For the nine months ended September 30, 2017 and 2016, the Refining Partnership recognized net losses of \$4.7 million and \$4.4 million, respectively. These recognized losses are recorded in loss on derivatives, net in the Condensed Consolidated Statements of Operations.

Counterparty Credit Risk

The Refining Partnership's exchange-traded crude oil futures and certain over-the-counter forward swap agreements are potentially exposed to concentrations of credit risk as a result of economic conditions and periods of uncertainty and illiquidity in the credit and capital markets. The Refining Partnership manages credit risk on its exchange-traded crude oil futures by completing trades with an exchange clearinghouse, which subjects the trades to mandatory margin requirements until the contract settles. The Refining Partnership also monitors the creditworthiness of its commodity swap counterparties and assesses the risk of nonperformance on a quarterly basis. Counterparty credit risk identified as a result of this assessment is recognized as a valuation adjustment to the fair value of the commodity swaps recorded in the Condensed Consolidated Balance Sheets. As of September 30, 2017, the counterparty credit risk adjustment was not material to the condensed consolidated financial statements. Additionally, the Refining Partnership does not require any collateral to support commodity swaps into which it enters; however, it does have master netting arrangements that allow for the setoff of amounts receivable from and payable to the same party, which mitigates the risk associated with nonperformance.

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Offsetting Assets and Liabilities

The commodity swaps and other commodity derivatives agreements discussed above include multiple derivative positions with a number of counterparties for which the Refining Partnership has entered into agreements governing the nature of the derivative transactions. Each of the counterparty agreements provides for the right to setoff each individual derivative position to arrive at the net receivable due from the counterparty or payable owed by the Refining Partnership. As a result of the right to setoff, the Refining Partnership's recognized assets and liabilities associated with the outstanding derivative positions have been presented net in the Condensed Consolidated Balance Sheets. In accordance with guidance issued by the FASB related to "Disclosures about Offsetting Assets and Liabilities," the table below outlines the gross amounts of the recognized assets and liabilities and the gross amounts offset in the Condensed Consolidated Balance Sheets for the various types of open derivative positions at the Refining Partnership.

The offsetting assets and liabilities for the Refining Partnership's derivatives as of September 30, 2017 and December 31, 2016 are recorded as current assets and current liabilities in prepaid expenses and other current assets and other current liabilities, respectively, in the Condensed Consolidated Balance Sheets as follows:

Description	As of September 30, 2017				
	Gross Current Assets	Gross Amounts Offset	Net Current Assets Presented	Cash Collateral Not Offset	Net Amount
	(in millions)				
Commodity Swaps	\$ 0.2	\$ (0.1)	\$ 0.1	\$ —	\$ 0.1
Total	<u>\$ 0.2</u>	<u>\$ (0.1)</u>	<u>\$ 0.1</u>	<u>\$ —</u>	<u>\$ 0.1</u>

Description	As of September 30, 2017				
	Gross Current Liabilities	Gross Amounts Offset	Net Current Liabilities Presented	Cash Collateral Not Offset	Net Amount
	(in millions)				
Commodity Swaps	\$ (21.4)	\$ 4.2	\$ (17.2)	\$ —	\$ (17.2)
Total	<u>\$ (21.4)</u>	<u>\$ 4.2</u>	<u>\$ (17.2)</u>	<u>\$ —</u>	<u>\$ (17.2)</u>

Description	As of December 31, 2016				
	Gross Current Liabilities	Gross Amounts Offset	Net Current Liabilities Presented	Cash Collateral Not Offset	Net Amount
	(in millions)				
Commodity Swaps	\$ 11.1	\$ —	\$ 11.1	\$ —	\$ 11.1
Total	<u>\$ 11.1</u>	<u>\$ —</u>	<u>\$ 11.1</u>	<u>\$ —</u>	<u>\$ 11.1</u>

(15) Related Party Transactions

Icahn Enterprises

In May 2012, IEP announced that it had acquired control of CVR pursuant to a tender offer to purchase all of the issued and outstanding shares of the Company's common stock. As of September 30, 2017, IEP and its affiliates owned approximately 82% of the Company's outstanding common shares. See Note 1 ("Organization and Basis of Presentation") for additional discussion.

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The following is a summary of dividends paid to the Company's stockholders, including IEP, for the respective quarters to which the distribution relate:

	December 31, 2016	March 31, 2017	June 30, 2017	Total Dividends Paid in 2017
Amount paid to IEP	\$ 35.6	\$ 35.6	\$ 35.6	\$ 106.8
Amounts paid to public stockholders	7.8	7.8	7.8	23.4
Total amount paid	\$ 43.4	\$ 43.4	\$ 43.4	\$ 130.2
Per common share	\$ 0.50	\$ 0.50	\$ 0.50	\$ 1.50
Shares outstanding	86.8	86.8	86.8	

Tax Allocation Agreement

CVR is a member of the consolidated federal tax group of AEPC, a wholly-owned subsidiary of IEP, and has entered into a Tax Allocation Agreement. Refer to Note 9 ("Income Taxes") for a discussion of related party transactions under the Tax Allocation Agreement.

Insight Portfolio Group

Insight Portfolio Group LLC ("Insight Portfolio Group") is an entity formed by Mr. Carl C. Icahn in order to maximize the potential buying power of a group of entities with which Mr. Icahn has a relationship in negotiating with a wide range of suppliers of goods, services and tangible and intangible property at negotiated rates. CVR Energy was a member of the buying group in 2012. In January 2013, CVR Energy acquired a minority equity interest in Insight Portfolio Group and agreed to pay a portion of Insight Portfolio Group's operating expenses in 2013. The Company paid Insight Portfolio Group approximately \$0.1 million for the three months ended September 30, 2016. There were no payments to Insight Portfolio Group for the three months ended September 30, 2017. The Company paid Insight Portfolio Group approximately \$0.2 million in each of the nine months ended September 30, 2017 and 2016. The Company may purchase a variety of goods and services as a member of the buying group at prices and terms that management believes would be more favorable than those which would be achieved on a stand-alone basis.

CRLLC Facility with the Nitrogen Fertilizer Partnership

On April 1, 2016, in connection with the closing of the East Dubuque Merger, the Nitrogen Fertilizer Partnership entered into a \$300.0 million senior term loan credit facility (the "CRLLC Facility") with CRLLC as the lender, the proceeds of which were used by the Nitrogen Fertilizer Partnership (i) to fund the repayment of amounts outstanding under the Wells Fargo Credit Agreement discussed in Note 3 ("Acquisition"), (ii) to pay the cash consideration and to pay fees and expenses in connection with the East Dubuque Merger and related transactions and (iii) to repay all of the loans outstanding under the Nitrogen Fertilizer Partnership credit facility. The CRLLC Facility had a term of two years and an interest rate of 12.0% per annum. Interest was calculated on the basis of the actual number of days elapsed over a 360-day year and payable quarterly. In April 2016, the Nitrogen Fertilizer Partnership borrowed \$300.0 million under the CRLLC Facility. On June 10, 2016, the Nitrogen Fertilizer Partnership paid off the \$300.0 million outstanding under the CRLLC Facility, paid \$7.0 million in interest and the CRLLC Facility was terminated.

Railcar Lease Agreements and Maintenance

The Nitrogen Fertilizer Partnership has agreements to lease a total of 115 UAN railcars from ARI Leasing, LLC ("ARI"), a company controlled by IEP. The lease agreements will expire in 2023. For the three and nine months ended September 30, 2017, rent expense of approximately \$0.2 million and \$0.7 million, respectively, was recorded in cost of materials and other in the Condensed Consolidated Statement of Operations related to these agreements. Rent expense related to these agreements were nominal for the three and nine months ended September 30, 2016.

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In the second quarter of 2017, the Nitrogen Fertilizer Partnership entered into agreements to lease an additional 70 UAN railcars from ARI. The lease agreement has a term of 5 years. The Nitrogen Fertilizer Partnership obtained physical receipt of the majority of the leased railcars and associated lease payment obligations commenced during the third quarter of 2017. Almost all of the additional railcars were received in October 2017.

American Railcar Industries, Inc., a company controlled by IEP, performed railcar maintenance for the Nitrogen Fertilizer Partnership and the expenses associated with this maintenance was approximately \$0.2 million for the nine months ended September 30, 2017 and is included in cost of materials and other in the Condensed Consolidated Statement of Operations. There were no expenses associated with this maintenance for the three months ended September 30, 2017.

Joint Venture Agreement

The Refining Partnership holds a 40% interest in a joint venture, Velocity Pipeline Partners, LLC, and the joint venture provides the Refining Partnership with crude oil transportation services. See Note 17 ("Equity Method Investment") for additional discussion of the joint venture.

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(16) Business Segments

The Company measures segment profit as operating income for petroleum and nitrogen fertilizer, CVR's two reporting segments, based on the definitions provided in FASB ASC Topic 280 – *Segment Reporting*. All operations of the segments are located within the United States.

Petroleum

Principal products of the petroleum segment are refined fuels, propane, and petroleum refining by-products, including pet coke. The petroleum segment's Coffeyville refinery sells pet coke to a subsidiary of the Nitrogen Fertilizer Partnership for use in the manufacture of nitrogen fertilizer at the adjacent nitrogen fertilizer plant. For the petroleum segment, a per-ton transfer price is used to record intercompany sales on the part of the petroleum segment and corresponding intercompany cost of materials and other for the nitrogen fertilizer segment. The per ton transfer price paid, pursuant to the pet coke supply agreement that became effective October 24, 2007, is based on the lesser of a pet coke price derived from the price received by the nitrogen fertilizer segment for UAN (subject to a UAN based price ceiling and floor) or a pet coke price index for pet coke. The intercompany transactions are eliminated in the other segment. Intercompany net sales included in petroleum net sales were approximately \$0.4 million for both the three months ended September 30, 2017 and 2016, respectively. Intercompany net sales included in petroleum net sales were approximately \$1.6 million and \$1.3 million for the nine months ended September 30, 2017 and 2016, respectively.

The petroleum segment recorded intercompany cost of materials and other for the hydrogen purchases, pursuant to the feedstock and shared services agreement, described below under "Nitrogen Fertilizer" of approximately \$0.0 million and \$1.2 million for the three months ended September 30, 2017 and 2016, respectively. For the nine months ended September 30, 2017 and 2016 the petroleum segment recorded intercompany cost of materials and other for the hydrogen purchases of approximately \$0.1 million and \$2.9 million, respectively.

Nitrogen Fertilizer

The principal product of the nitrogen fertilizer segment is nitrogen fertilizer. Intercompany cost of materials and other for the pet coke transfer described above was approximately \$0.6 million and \$0.5 million for the three months ended September 30, 2017 and 2016, respectively. Intercompany cost of materials and other for the pet coke transfer described above was approximately \$1.6 million and \$1.7 million for the nine months ended September 30, 2017 and 2016, respectively.

Prior to January 1, 2017, pursuant to the feedstock agreement, the Company's segments had the right to transfer hydrogen between the Coffeyville refinery and the Coffeyville Fertilizer Facility. Sales of hydrogen to the petroleum segment have been reflected as net sales for the nitrogen fertilizer segment. Receipts of hydrogen from the petroleum segment have been reflected in cost of materials and other for the nitrogen fertilizer segment. For the three and nine months ended September 30, 2016, the net sales from CRNF to CRRM were \$1.2 million and \$2.9 million, respectively. Beginning January 1, 2017, hydrogen sales from CRRM to CRNF are governed pursuant to the hydrogen purchase and sales agreement. Sales of hydrogen from CRNF to CRRM remain governed pursuant to the feedstock and shared services agreement. For the three and nine months ended September 30, 2017, the gross sales from CRRM to CRNF generated from intercompany hydrogen sales were \$0.9 million and \$3.0 million, respectively. As these intercompany sales and cost of materials and other are eliminated, there is no financial statement impact on the condensed consolidated financial statements.

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Other Segment

The other segment reflects intercompany eliminations, corporate cash and cash equivalents, income tax activities and other corporate activities that are not allocated to the operating segments. The following table summarizes certain operating results and capital expenditures information by segment:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
	(in millions)			
Net sales				
Petroleum	\$ 1,385.8	\$ 1,163.5	\$ 4,147.5	\$ 3,161.9
Nitrogen Fertilizer	69.4	78.5	252.6	271.4
Intersegment elimination	(1.4)	(1.7)	(4.8)	(4.3)
Total	<u>\$ 1,453.8</u>	<u>\$ 1,240.3</u>	<u>\$ 4,395.3</u>	<u>\$ 3,429.0</u>
Cost of materials and other				
Petroleum	\$ 1,114.4	\$ 987.5	\$ 3,523.7	\$ 2,651.7
Nitrogen Fertilizer	19.4	19.9	63.3	72.2
Intersegment elimination	(1.4)	(1.7)	(4.8)	(4.6)
Total	<u>\$ 1,132.4</u>	<u>\$ 1,005.7</u>	<u>\$ 3,582.2</u>	<u>\$ 2,719.3</u>
Direct operating expenses (exclusive of depreciation and amortization)				
Petroleum	\$ 120.9	\$ 97.0	\$ 309.3	\$ 298.7
Nitrogen Fertilizer	40.3	32.5	114.0	110.4
Other	(0.1)	—	0.1	0.1
Total	<u>\$ 161.1</u>	<u>\$ 129.5</u>	<u>\$ 423.4</u>	<u>\$ 409.2</u>
Depreciation and amortization				
Petroleum	\$ 33.0	\$ 32.5	\$ 99.5	\$ 95.6
Nitrogen Fertilizer	19.5	16.4	54.9	41.0
Other	1.6	1.2	4.8	4.2
Total	<u>\$ 54.1</u>	<u>\$ 50.1</u>	<u>\$ 159.2</u>	<u>\$ 140.8</u>
Operating income (loss)				
Petroleum	\$ 98.7	\$ 28.4	\$ 157.3	\$ 62.5
Nitrogen Fertilizer	(15.9)	2.4	1.6	25.8
Other	(3.9)	(3.6)	(11.1)	(10.3)
Total	<u>\$ 78.9</u>	<u>\$ 27.2</u>	<u>\$ 147.8</u>	<u>\$ 78.0</u>
Capital expenditures				
Petroleum	\$ 18.7	\$ 15.4	\$ 66.1	\$ 83.4
Nitrogen Fertilizer	2.8	6.4	11.4	18.3
Other	1.0	1.0	2.4	3.9
Total	<u>\$ 22.5</u>	<u>\$ 22.8</u>	<u>\$ 79.9</u>	<u>\$ 105.6</u>

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	As of September 30, 2017	As of December 31, 2016
	(in millions)	
Total assets		
Petroleum	\$ 2,500.7	\$ 2,331.9
Nitrogen Fertilizer	1,275.8	1,312.2
Other	256.3	406.1
Total	\$ 4,032.8	\$ 4,050.2
Goodwill		
Petroleum	\$ —	\$ —
Nitrogen Fertilizer	41.0	41.0
Other	—	—
Total	\$ 41.0	\$ 41.0

(17) Equity Method Investment

On September 19, 2016, Coffeyville Resources Pipeline, LLC ("CRPLLC"), an indirect wholly-owned subsidiary of the Refining Partnership, entered into an agreement with Velocity Central Oklahoma Pipeline LLC ("Velocity") related to their joint ownership of Velocity Pipeline Partners, LLC ("VPP"), which was formed to construct, own and operate a crude oil pipeline. CRPLLC holds a 40% interest in VPP. Velocity holds a 60% interest in VPP and serves as the day-to-day operator of VPP. As of September 30, 2017, the carrying value of CRPLLC's investment in VPP was \$6.3 million, which is recorded in other long-term assets on the Condensed Consolidated Balance Sheets. Contribution by CRPLLC to VPP during the pipeline construction totaled \$7.0 million, of which \$1.4 million was contributed in the first quarter of 2017.

The pipeline commenced operations in mid-April 2017 following completion of construction. Equity income from VPP for the three and six months ended September 30, 2017 was \$0.1 million and \$0.2 million, respectively, which is recorded in other income, net on the Condensed Consolidated Statement of Operations. In July 2017, CRPLLC received a cash distribution from VPP of \$0.9 million.

CRRM is party to a transportation agreement with VPP pursuant to which VPP provides transportation services to CRRM for crude oil shipped on VPP's pipeline. For the three and six months ended September 30, 2017, CRRM incurred costs of \$0.7 million and \$1.2 million, respectively, under the transportation agreement with VPP. CRRM's crude shipments on the pipeline for the three and six months ended September 30, 2017 averaged approximately 18,000 bpd and 16,000 bpd, respectively. As of September 30, 2017, the Condensed Consolidated Balance Sheet included a liability of \$0.2 million to VPP.

(18) Subsequent Events

Dividend

On October 31, 2017, the board of directors of the Company declared a cash dividend for the third quarter of 2017 to the Company's stockholders of \$0.50 per share, or \$43.4 million in the aggregate. The dividend will be paid on November 17, 2017 to stockholders of record at the close of business on November 10, 2017. IEP will receive \$35.6 million in respect of its 82% ownership interest in the Company's shares.

Refining Partnership Distribution

On October 31, 2017, the board of directors of the Refining Partnership's general partner declared a cash distribution for the third quarter of 2017 to the Refining Partnership's unitholders of \$0.94 per common unit, or \$138.7 million in aggregate. The cash distribution will be paid on November 17, 2017 to unitholders of record at the close of business on November 10, 2017. The Company will receive \$91.5 million in respect of its Refining Partnership common units.

Joint Venture Agreement

On October 31, 2017, subsidiaries of CVR Refining and Plains All American Pipeline, L.P. ("Plains") formed a 50/50 joint venture, Midway Pipeline LLC ("Midway"), which has acquired the approximately 100-mile, 16-inch Cushing to Broome pipeline system from Plains. The Cushing to Broome pipeline system connects CVR Refining's Coffeyville, Kansas, refinery to the Cushing, Oklahoma, oil hub. Midway has entered into a contract with Plains pursuant to which Plains will continue its role as operator of the pipeline. In a separate unrelated transaction, subsidiaries of CVR Refining and Plains entered into an agreement on October 31, 2017, pursuant to which CVR Refining has agreed to acquire the Cushing to Ellis crude oil pipeline system from Plains. The approximately 100-mile, 8- and 10-inch pipeline system helps link CVR Refining's Wynnewood, Oklahoma, refinery to Cushing. The acquisition, which remains subject to the satisfaction or waiver of certain conditions, is expected to close in the 2017 fourth quarter. Financial terms of the transactions were not disclosed.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the unaudited condensed consolidated financial statements and related notes and with the statistical information and financial data appearing in this Report, as well as our 2016 Form 10-K. Results of operations and cash flows for the three and nine months ended September 30, 2017 are not necessarily indicative of results to be attained for any other period.

Forward-Looking Statements

This Report, including this Management's Discussion and Analysis of Financial Condition and Results of Operations, contains "forward-looking statements" as defined by the Securities and Exchange Commission ("SEC"), including statements concerning contemplated transactions and strategic plans, expectations and objectives for future operations. Forward-looking statements include, without limitation:

- statements, other than statements of historical fact, that address activities, events or developments that we expect, believe or anticipate will or may occur in the future;
- statements relating to future financial or operational performance, future dividends, future capital sources and capital expenditures; and
- any other statements preceded by, followed by or that include the words "anticipates," "believes," "expects," "plans," "intends," "estimates," "projects," "could," "should," "may" or similar expressions.

Although we believe that our plans, intentions and expectations reflected in or suggested by the forward-looking statements we make in this Report, including this Management's Discussion and Analysis of Financial Condition and Results of Operations, are reasonable, we can give no assurance that such plans, intentions or expectations will be achieved. These statements are based on assumptions made by us based on our experience and perception of historical trends, current conditions, expected future developments and other factors that we believe are appropriate in the circumstances. Such statements are subject to a number of risks and uncertainties, many of which are beyond our control. You are cautioned that any such statements are not guarantees of future performance and that actual results or developments may differ materially from those projected in the forward-looking statements as a result of various factors, including but not limited to those set forth under Part I — Item 1A. "Risk Factors" in the 2016 Form 10-K, filed with the SEC on February 21, 2017. Such factors include, among others:

- volatile margins in the refining industry and exposure to the risks associated with volatile crude oil prices;
- the availability of adequate cash and other sources of liquidity for the capital needs of our businesses;
- the ability to forecast future financial condition or results of operations and future revenues and expenses of our businesses;
- the effects of transactions involving forward and derivative instruments;
- disruption of the petroleum business' ability to obtain an adequate supply of crude oil;
- changes in laws, regulations and policies with respect to the export of crude oil or other hydrocarbons;
- interruption of the pipelines supplying feedstock and in the distribution of the petroleum business' products;
- competition in the petroleum and nitrogen fertilizer businesses;
- capital expenditures and potential liabilities arising from environmental laws and regulations;
- changes in ours or the Refining Partnership's or Nitrogen Fertilizer Partnership's credit profile;
- the cyclical nature of the nitrogen fertilizer business;
- the seasonal nature of the petroleum business;
- the supply and price levels of essential raw materials of our businesses;

- the risk of a material decline in production at our refineries and nitrogen fertilizer plants;
- potential operating hazards from accidents, fire, severe weather, floods or other natural disasters;
- the risk associated with governmental policies affecting the agricultural industry;
- the volatile nature of ammonia, potential liability for accidents involving ammonia that cause interruption to the nitrogen fertilizer business, severe damage to property and/or injury to the environment and human health and potential increased costs relating to the transport of ammonia;
- the dependence of the nitrogen fertilizer business on a few third-party suppliers, including providers of transportation services and equipment;
- new regulations concerning the transportation of hazardous chemicals, risks of terrorism and the security of chemical manufacturing facilities;
- the risk of security breaches;
- the petroleum business' and the nitrogen fertilizer business' dependence on significant customers;
- the potential loss of the nitrogen fertilizer business' transportation cost advantage over its competitors;
- the potential inability to successfully implement our business strategies, including the completion of significant capital programs;
- our ability to continue to license the technology used in the petroleum business and nitrogen fertilizer business operations;
- our petroleum business' ability to purchase RINs on a timely and cost effective basis;
- our petroleum business' continued ability to secure environmental and other governmental permits necessary for the operation of its business;
- existing and proposed environmental laws and regulations, including those relating to climate change, alternative energy or fuel sources, and existing and future regulations related to the end-use and application of fertilizers;
- refinery and nitrogen fertilizer facilities' operating hazards and interruptions, including unscheduled maintenance or downtime, and the availability of adequate insurance coverage;
- instability and volatility in the capital and credit markets; and
- potential exposure to underfunded pension obligations of affiliates as a member of the controlled group of Mr. Icahn.

All forward-looking statements contained in this Report speak only as of the date of this Report. We undertake no obligation to publicly update or revise any forward-looking statements to reflect events or circumstances that occur after the date of this Report, or to reflect the occurrence of unanticipated events, except to the extent required by law.

Company Overview

CVR Energy, Inc. ("CVR Energy," "CVR," "we," "us," "our" or the "Company") is a diversified holding company primarily engaged in the petroleum refining and nitrogen fertilizer manufacturing industries through our holdings in the Refining Partnership and the Nitrogen Fertilizer Partnership. The Refining Partnership is an independent petroleum refiner and marketer of high value transportation fuels. The Nitrogen Fertilizer Partnership produces and markets nitrogen fertilizers in the form of UAN and ammonia. At September 30, 2017, we owned the general partner and approximately 66% and 34% respectively, of the outstanding common units representing limited partner interests in each of the Refining Partnership and the Nitrogen Fertilizer Partnership. As of September 30, 2017, Icahn Enterprises L.P. and its affiliates owned approximately 82% of our outstanding common stock.

We operate under two business segments: petroleum and nitrogen fertilizer, which are referred to in this document as our "petroleum business" and our "nitrogen fertilizer business," respectively.

Petroleum business. The petroleum business consists of our interest in the Refining Partnership. At September 30, 2017, we owned 100% of the general partner and approximately 66% of the common units of the Refining Partnership. The petroleum business consists of a 115,000 bpcd rated capacity complex full coking medium-sour crude oil refinery in Coffeyville, Kansas and a 70,000 bpcd rated capacity complex crude oil refinery in Wynnewood, Oklahoma capable of processing 20,000 bpcd of light sour crude oil (within its rated capacity of 70,000 bpcd). In addition, its supporting businesses include (i) a crude oil gathering system with a gathering capacity of over 80,000 bpd serving Kansas, Nebraska, Oklahoma, Missouri, Colorado and Texas, which serves the two refineries, (ii) a 170,000 bpd pipeline system, which transports crude oil to the Coffeyville refinery from our Broome Station facility located near Caney, Kansas, and is supported by approximately 340 miles of active owned and leased pipelines, (iii) a 65,000 bpd pipeline owned and operated by our joint venture VPP, which transports gathered crude oil to the Wynnewood refinery from a trucking terminal at Lowrance, Oklahoma, (iv) approximately 6.4 million barrels of owned and leased crude oil storage, (v) a rack marketing business supplying refined petroleum product through tanker trucks directly to customers located in close geographic proximity to Coffeyville, Kansas and Wynnewood, Oklahoma and at throughput terminals on Magellan and NuStar refined petroleum products distribution systems and (vi) over 4.5 million barrels of combined refined products and feedstocks storage capacity. Subsequent to September 30, 2017, the Refining Partnership entered into a joint venture with a subsidiary of Plains All American Pipeline, L.P. ("Plains"), which acquired the approximately 100-mile, 16-inch pipeline that connects the Refining Partnership's Coffeyville, Kansas refinery to the Cushing, Oklahoma oil hub, and the Refining Partnership entered into a separate unrelated agreement with Plains to acquire the approximately 100-mile, 8- and 10-inch pipeline system connecting the Refining Partnership's Wynnewood, Oklahoma refinery to Cushing. Refer to Part I, Item I, Note 18 ("Subsequent Events") of this Report for a discussion of these transactions.

The Coffeyville refinery is situated approximately 100 miles northeast of Cushing, Oklahoma, one of the largest crude oil trading and storage hubs in the United States and the Wynnewood refinery is approximately 130 miles southwest of Cushing. Cushing is supplied by numerous pipelines from U.S. domestic locations and Canada. In addition to rack sales (sales which are made at terminals into third-party tanker trucks), Coffeyville makes bulk sales (sales through third-party pipelines) into the mid-continent markets and other destinations utilizing the product pipeline networks owned by Magellan, Enterprise, and NuStar.

Crude oil is supplied to the Coffeyville refinery through the gathering system and by a pipeline previously owned by Plains that runs from Cushing to its Broome Station facility. As discussed above, the Refining Partnership entered into a joint venture with Plains subsequent to September 30, 2017, which acquired this pipeline. The petroleum business maintains capacity on the Keystone and Spearhead pipelines from Canada to Cushing. It also has contracted capacity on the Pony Express and White Cliffs pipelines, which originate in Colorado and extend to Cushing. It also maintains leased and owned storage in Cushing to facilitate optimal crude oil purchasing and blending. Crude oil is supplied to the Wynnewood refinery through third-party pipelines operated by Plains, Sunoco Pipeline, Excel Pipeline and Blueknight Pipeline and, beginning in April 2017, through the joint venture VPP pipeline. As discussed above, the Refining Partnership entered into an agreement with Plains subsequent to September 30, 2017, to acquire a pipeline that connects the Refining Partnership's Wynnewood refinery to Cushing, which the Refining Partnership expects to close in the 2017 fourth quarter, subject to the satisfaction or waiver of certain conditions. Historically, the crude has been sourced from Texas and Oklahoma. The access to a variety of crude oils coupled with the complexity of the refineries typically allows the petroleum business to purchase crude oil at a discount to WTI. The consumed crude oil cost discount to WTI for the third quarter of 2017 was \$0.03 per barrel compared to a discount of \$0.37 per barrel in the third quarter of 2016.

Nitrogen fertilizer business. The nitrogen fertilizer business consists of our interest in the Nitrogen Fertilizer Partnership. As of September 30, 2017, we owned 100% of the general partner and approximately 34% of the common units of the Nitrogen Fertilizer Partnership. The nitrogen fertilizer business consists of two nitrogen fertilizer manufacturing facilities which are located in Coffeyville, Kansas and East Dubuque, Illinois. The Coffeyville Fertilizer Facility utilizes a petroleum coke, or pet coke, gasification process to produce nitrogen fertilizer, and the East Dubuque Fertilizer Facility uses natural gas to produce nitrogen fertilizer. The Coffeyville Fertilizer Facility includes a 1,300 ton-per-day capacity ammonia unit, a 3,000 ton-per-day capacity UAN unit and a gasifier complex having a capacity of 89 million standard cubic feet per day of hydrogen. The gasifier is a dual-train facility, with each gasifier able to function independently of the other, thereby providing redundancy and improving reliability. Strategically located adjacent to CVR Refining's refinery in Coffeyville, Kansas, the Coffeyville Fertilizer Facility is the only operation in North America that utilizes a petroleum coke, or pet coke, gasification process to produce nitrogen fertilizer. During the past five years, over 70% of the pet coke consumed by the Coffeyville Fertilizer Facility was produced and supplied by CVR Refining's Coffeyville, Kansas crude oil refinery.

The Coffeyville Fertilizer Facility now upgrades substantially all of the ammonia it produces to higher margin UAN fertilizer, which has historically commanded a premium price over ammonia. For the three months ended September 30, 2017 and 2016, approximately 95% and 96%, respectively, of the Coffeyville Fertilizer Facility produced ammonia tons were upgraded into UAN. For the nine months ended September 30, 2017 and 2016, approximately 88% and 92%, respectively, of the Coffeyville Fertilizer Facility produced ammonia tons were upgraded into UAN.

The East Dubuque Facility includes a 1,075 ton-per-day capacity ammonia unit and a 1,100 ton-per-day capacity UAN unit. The facility is located on a 210-acre, 140-foot bluff above the Mississippi River, with access to the river for loading certain products. The East Dubuque Facility uses natural gas as its primary feedstock. The East Dubuque Facility has the flexibility to vary its product mix, which enables the East Dubuque Facility to upgrade a portion of its ammonia production into varying amounts of UAN, nitric acid and liquid and granulated urea each season, depending on market demand, pricing and storage availability. Product sales are heavily weighted toward sales of ammonia and UAN. For the post-acquisition period ended December 31, 2016, approximately 44% of our East Dubuque Facility produced ammonia tons were upgraded to other products. For the three months ended September 30, 2017 and 2016, approximately 44% and 41%, respectively, of East Dubuque Facility produced ammonia tons were upgraded to other products. For the nine months ended September 30, 2017, approximately 44% of the East Dubuque Facility produced ammonia tons were upgraded to other products.

Major Influences on Results of Operations

Petroleum Business

The earnings and cash flows of the petroleum business are primarily affected by the relationship between refined product prices and the prices for crude oil and other feedstocks that are processed and blended into refined products. The cost to acquire crude oil and other feedstocks and the price for which refined products are ultimately sold depend on factors beyond the petroleum business' control, including the supply of and demand for crude oil, as well as gasoline and other refined products which, in turn, depend on, among other factors, changes in domestic and foreign economies, weather conditions, domestic and foreign political affairs, production levels, the availability of imports, the marketing of competitive fuels and the extent of government regulation. Because the petroleum business applies first-in, first-out ("FIFO") accounting to value its inventory, crude oil price movements may impact net income in the short term because of changes in the value of its unhedged on-hand inventory. The effect of changes in crude oil prices on our results of operations is influenced by the rate at which the prices of refined products adjust to reflect these changes.

The prices of crude oil and other feedstocks and refined products are also affected by other factors, such as product pipeline capacity, local market conditions and the operating levels of competing refineries. Crude oil costs and the prices of refined products have historically been subject to wide fluctuations. Widespread expansion or upgrades of competitors' facilities, price volatility, international political and economic developments and other factors are likely to continue to play an important role in refining industry economics. These factors can impact, among other things, the level of inventories in the market, resulting in price volatility and a reduction in product margins. Moreover, the refining industry typically experiences seasonal fluctuations in demand for refined products, such as increases in the demand for gasoline during the summer driving season and for volatile seasonal exports of diesel from the United States Gulf Coast markets. In addition to current market conditions, there are long-term factors that may impact the demand for refined products. These factors include mandated renewable fuels standards, proposed climate change laws and regulations and increased mileage standards for vehicles. The petroleum business is also subject to RFS, which requires it to either blend "renewable fuels" in with its transportation fuels or purchase RINs, in lieu of blending, by March 31, 2018 or otherwise be subject to penalties.

On December 12, 2016, the United States Environmental Protection Agency ("EPA") published in the Federal Register the final rule establishing the renewable fuel volume mandates for 2017, and the biomass-based diesel mandate for 2018. On July 21, 2017, the EPA published in the Federal Register its proposed rule establishing the renewable fuel volume mandates for 2018, and the biomass-based diesel mandate for 2019. The EPA is required by the Clean Air Act to publish the final rule for 2018 by November 30, 2017.

RINs expense for the three months ended September 30, 2017 and 2016 was \$64.3 million and \$58.3 million, respectively. RINs expense for the nine months ended September 30, 2017 and 2016 was \$163.5 million and \$152.4 million, respectively. RINs expense includes the impact of recognizing the petroleum business' uncommitted biofuel blending obligation at fair value based on market prices at each reporting date. The price of RINs has been extremely volatile over the last year. The future cost of RINs for the petroleum business is difficult to estimate. Additionally, the cost of RINs is dependent upon a variety of factors, which include EPA regulations, the availability of RINs for purchase, the price at which RINs can be purchased, transportation fuel production levels, the mix of the petroleum business' petroleum products, as well as the fuel blending performed at its refineries and downstream terminals, all of which can vary significantly from period to period. Based upon recent market prices of RINs and current estimates related to the other variable factors, the petroleum business currently estimates that the total cost of RINs will be approximately \$235.0 million to \$265.0 million for the year ending December 31, 2017.

If sufficient RINs are unavailable for purchase at times when the petroleum business seeks to purchase RINs, if the petroleum business has to pay a significantly higher price for RINs or if the petroleum business is otherwise unable to meet the EPA's RFS mandates, its business, financial condition and results of operations could be materially adversely affected.

In order to assess the operating performance of the petroleum business, we compare net sales, less cost of materials and other, or the refining margin, against an industry refining margin benchmark. The industry refining margin benchmark is calculated by assuming that two barrels of benchmark light sweet crude oil are converted into one barrel of conventional gasoline and one barrel of distillate. This benchmark is referred to as the 2-1-1 crack spread. Because we calculate the benchmark margin using the market value of NYMEX gasoline and heating oil against the market value of NYMEX WTI, we refer to the benchmark as the NYMEX 2-1-1 crack spread, or simply, the 2-1-1 crack spread. The 2-1-1 crack spread is expressed in dollars per barrel and is a proxy for the per barrel margin that a sweet crude oil refinery would earn assuming it produced and sold the benchmark production of gasoline and distillate.

Although the 2-1-1 crack spread is a benchmark for the refining margin, because the refineries have certain feedstock costs and logistical advantages as compared to a benchmark refinery and their product yield is less than total refinery throughput, the crack spread does not account for all the factors that affect refining margin. The Coffeyville refinery is able to process a blend of crude oil that includes quantities of heavy and medium sour crude oil that has historically cost less than WTI. The Wynnewood refinery has the capability to process blends of a variety of crude oil ranging from medium sour to light sweet crude oil, although isobutane, gasoline components and normal butane are also typically used. We measure the cost advantage of the crude oil slate by calculating the spread between the price of our delivered crude oil and the price of WTI. The spread is referred to as the consumed crude oil differential. The refining margin can be impacted significantly by the consumed crude oil differential. The consumed crude oil differential will move directionally with changes in the WCS price differential to WTI as this differential indicates the relative price of heavier, more sour, crude oil slate to WTI. The correlation between the consumed crude oil differential and published differentials will vary depending on the volume of heavy sour crude oil the petroleum business purchases as a percent of the total crude oil volume.

The petroleum business produces a high volume of high value products, such as gasoline and distillates. The fact that the actual product specifications used to determine the NYMEX 2-1-1 crack spread are different from the actual production in its refineries is because the prices the petroleum business realizes are different than those used in determining the 2-1-1 crack spread. The difference between its price and the price used to calculate the 2-1-1 crack spread is referred to as gasoline PADD II, Group 3 vs. NYMEX basis, or gasoline basis, and Ultra-Low Sulfur Diesel PADD II, Group 3 vs. NYMEX basis, or Ultra-Low Sulfur Diesel basis. If both gasoline and Ultra-Low Sulfur Diesel basis are greater than zero, this means that prices in its marketing area exceed those used in the 2-1-1 crack spread.

The petroleum business is significantly affected by developments in the markets in which it operates. For example, numerous pipeline expansions in recent years expanding the connectivity of Cushing and Permian Basin markets to the gulf coast, along with lifting the crude oil export ban has resulted in a decrease in the domestic crude advantage. The refining industry is directly impacted by these events and has seen a downward movement in refining margins as a result. The stabilization of oil prices led by OPEC's decision to lower production volumes and the resurgent shale drilling in the Permian and other tight oil plays are expected to cause price spread volatility as the industry attempts to match infrastructure to supply.

The direct operating expense structure is also important to the petroleum business' profitability. Major direct operating expenses include energy, employee labor, maintenance, contract labor and environmental compliance. The predominant variable cost is energy, which is comprised primarily of electrical cost and natural gas. The petroleum business is therefore sensitive to the movements of natural gas prices. Assuming the same rate of consumption of natural gas for the nine months ended September 30, 2017, a \$1.00 change in natural gas price would have increased or decreased the petroleum business' natural gas costs by approximately \$9.2 million.

Because crude oil and other feedstocks and refined products are commodities, the petroleum business has no control over the changing market. Therefore, the lower target inventory the petroleum business is able to maintain significantly reduces the impact of commodity price volatility on its petroleum product inventory position relative to other refiners. This target inventory position is generally not hedged. To the extent its inventory position deviates from the target level, the petroleum business considers risk mitigation activities usually through the purchase or sale of futures contracts on the NYMEX. Its hedging activities carry customary time, location and product grade basis risks generally associated with hedging activities. Because most of its titled inventory is valued under the FIFO costing method, price fluctuations on its target level of titled inventory have a major effect on the petroleum business' financial results from period to period.

Safe and reliable operations at the refineries are key to the petroleum business' financial performance and results of operations. Unscheduled downtime at our refineries may result in lost margin opportunity, increased maintenance expense and a temporary increase in working capital investment and related inventory position. The petroleum business seeks to mitigate the financial impact of scheduled downtime, such as major turnaround maintenance, through a diligent planning process that takes into account the margin environment, the availability of resources to perform the needed maintenance, feedstock logistics and other factors. The refineries generally require a facility turnaround every four to five years. The length of the turnaround is contingent upon the scope of work to be completed. The first phase of the Coffeyville refinery's most recent turnaround was completed in November 2015. The second phase of the Coffeyville turnaround was completed during the first quarter of 2016. During the first half of 2016, the petroleum business incurred \$31.5 million of major scheduled turnaround expenses for the Coffeyville refinery turnaround. The next turnaround scheduled for the Wynnewood refinery is being performed as a two phase turnaround. The first phase of its current turnaround began in late September 2017 and is expected to approximate 42 days at a total estimated cost of approximately \$70.0 million. During the third quarter of 2017, we incurred \$21.7 million of major scheduled turnaround expenses for the Wynnewood refinery turnaround. The second phase of the Wynnewood turnaround is expected to begin in the second half of 2018. In addition to the two phase turnaround, the petroleum business accelerated certain planned turnaround activities in the first quarter of 2017 on the hydrocracker unit for a catalyst change-out. The petroleum business incurred approximately \$13.0 million of major scheduled turnaround expenses for the hydrocracker.

Nitrogen Fertilizer Business

In the nitrogen fertilizer business, earnings and cash flows from operations are primarily affected by the relationship between nitrogen fertilizer product prices, on-stream factors and operating costs and expenses. The price at which nitrogen fertilizer products are ultimately sold depends on numerous factors, including the global supply and demand for nitrogen fertilizer products which, in turn, depends on, among other factors, world grain demand and production levels, changes in world population, the cost and availability of fertilizer transportation infrastructure, weather conditions, the availability of imports and the extent of government intervention in agriculture markets.

Nitrogen fertilizer prices are also affected by local factors, including local market conditions and the operating levels of competing facilities. An expansion or upgrade of competitors' facilities, new facility development, political and economic developments and other factors are likely to continue to play an important role in nitrogen fertilizer industry economics. These factors can impact, among other things, the level of inventories in the market, resulting in price volatility and a reduction in product margins. Moreover, the industry typically experiences seasonal fluctuations in demand for nitrogen fertilizer products.

The nitrogen fertilizer business has the capacity to store approximately 160,000 tons of UAN and 80,000 tons of ammonia in storage tanks located primarily at the two production facilities. Inventories are often allowed to accumulate to allow customers to take delivery to meet the seasonal demand.

In order to assess the operating performance of the nitrogen fertilizer business, the nitrogen fertilizer business calculates the product pricing at gate as an input to determine its operating margin. Product pricing at gate represents net sales less freight revenue divided by product sales volume in tons. The nitrogen fertilizer business believes product pricing at gate is a meaningful measure because it sells products at its plant gates and terminal locations' gates ("sold gate") and delivered to the customer's designated delivery site ("sold delivered"). The relative percentage of sold gate versus sold delivered can change period to period. The product pricing at gate provides a measure that is consistently comparable period to period.

The nitrogen fertilizer business and other competitors in the U.S. farm belt share a significant transportation cost advantage when compared to out-of-region competitors in serving the U.S. farm belt agricultural market. The nitrogen fertilizer business' products leave the Coffeyville Fertilizer Facility either in railcars for destinations located principally on the Union Pacific Railroad or in trucks for direct shipment to customers. The nitrogen fertilizer business does not currently incur significant intermediate transfer, storage, barge freight or pipeline freight charges; however, it does incur costs to maintain and repair its railcar fleet for the Coffeyville Fertilizer Facility. Selling products to customers within economic rail transportation limits of the Coffeyville Fertilizer Facility and keeping transportation costs low are keys to maintaining profitability.

The East Dubuque Facility is located in northwest Illinois, in the corn belt. The East Dubuque Facility primarily sells its product to customers located within 200 miles of the facility. In most instances, customers take delivery of nitrogen products at the plant and arrange and pay to transport them to their final destinations by truck. The East Dubuque Facility has direct access to a barge dock on the Mississippi River as well as a nearby rail spur serviced by the Canadian National Railway Company.

The high fixed cost of the Coffeyville Fertilizer Facility direct operating expense structure also directly affects the Nitrogen Fertilizer Partnership's profitability. The Coffeyville Fertilizer Facility's pet coke gasification process results in a significantly higher percentage of fixed costs than a natural gas-based fertilizer plant, such as the East Dubuque Facility. Major fixed operating expenses include a large portion of electrical energy, employee labor, and maintenance, including contract labor and outside services.

The Coffeyville Fertilizer Facility's largest raw material expense used in the production of ammonia is pet coke, which it purchases from the petroleum business and third parties. For the three months ended September 30, 2017 and 2016, the nitrogen fertilizer business incurred approximately \$2.0 million and \$1.7 million, respectively, for the cost of pet coke, which equaled an average cost per ton of \$18 and \$13, respectively. For the nine months ended September 30, 2017 and 2016, the nitrogen fertilizer business incurred approximately \$6.5 million and \$5.4 million, respectively, for the cost of pet coke, which equaled an average cost per ton of \$18 and \$14, respectively.

The largest raw material expense used in the production of ammonia at the East Dubuque Facility is natural gas, which is purchased from third parties. The East Dubuque Facility's natural gas process results in a higher percentage of variable costs as compared to the Coffeyville Fertilizer Facility. For the three months ended September 30, 2017 and 2016, the East Dubuque Facility incurred approximately \$6.1 million and \$4.9 million, respectively, for feedstock natural gas, which equaled an average cost per MMBtu of \$3.15 and \$2.92, respectively. For the nine months ended September 30, 2017, the East Dubuque Facility expensed approximately \$19.5 million for feedstock natural gas, which equaled an average cost per MMBtu of \$3.30.

Consistent, safe and reliable operations at the nitrogen fertilizer plants are critical to its financial performance and results of operations. Unplanned downtime of the nitrogen fertilizer plants may result in lost margin opportunity, increased maintenance expense and a temporary increase in working capital investment and related inventory position. The financial impact of planned downtime, such as major turnaround maintenance, is mitigated through a diligent planning process that takes into account margin environment, the availability of resources to perform the needed maintenance, feedstock logistics and other factors. Historically, the Coffeyville Fertilizer Facility has undergone a full facility turnaround approximately every two to three years. The Coffeyville Fertilizer Facility underwent a full facility turnaround in the third quarter of 2015, at a cost of approximately \$7.0 million, exclusive of the impacts due to the lost production during the downtime. The Coffeyville Fertilizer Facility is planning to undergo the next scheduled full facility turnaround in 2018. Historically, the East Dubuque Facility has also undergone a full facility turnaround approximately every two to three years. The East Dubuque Facility underwent a full facility turnaround in the second quarter of 2016, at a cost of approximately \$6.6 million, exclusive of the impacts due to the lost production during the downtime. We determined that there were more pressing preventative maintenance issues at the East Dubuque Facility, so we completed a scheduled turnaround at the East Dubuque Facility in the third quarter of 2017 at a cost of approximately \$2.6 million, exclusive of the impacts of the lost production during the downtime. Production levels in the third quarter of 2017 were negatively impacted by the planned 14-day turnaround at the East Dubuque Facility. Production levels in the third quarter of 2017 were also impacted an additional eight days of unplanned downtime due to an exchanger outage at the East Dubuque Facility that resulted in repair costs which were not material. Subsequent to the third quarter of 2017, the East Dubuque Facility experienced an additional outage caused by refractory failing in piping. As of the date of this filing, the piping repair work is ongoing and the total outage is expected to last 12 days and the repair cost is estimated to be immaterial.

Agreements with the Refining Partnership and the Nitrogen Fertilizer Partnership

We are party to several agreements with the Nitrogen Fertilizer Partnership that govern the business relations among the Nitrogen Fertilizer Partnership and its affiliates on the one hand and us and our affiliates on the other hand. In connection with the Refining Partnership IPO in January 2013, some of our subsidiaries party to these agreements became subsidiaries of the Refining Partnership.

These intercompany agreements include: (i) the pet coke supply agreement mentioned above, under which the petroleum business sells pet coke to the nitrogen fertilizer business; (ii) a services agreement, pursuant to which we provide certain services to the nitrogen fertilizer business; (iii) a feedstock and shared services agreement, which governs the provision of feedstocks, including, but not limited to high-pressure steam, nitrogen, instrument air, oxygen and natural gas; (iv) a hydrogen purchase and sale agreement, which governs the purchase of hydrogen for the Coffeyville Fertilizer Facility; (v) a raw water and facilities sharing agreement, which allocates raw water resources between the two businesses; (vi) an easement agreement; (vii) an environmental agreement; and (viii) a lease agreement pursuant to which the petroleum business leases office space and laboratory space to the Nitrogen Fertilizer Partnership. These agreements were not the result of arm's-length negotiations and the terms of these agreements are not necessarily as favorable to the parties to these agreements as terms which could have been obtained from unaffiliated third parties.

In connection with the Refining Partnership IPO, we entered into a number of agreements with the Refining Partnership, including (i) a \$250.0 million intercompany credit facility between CRLLC and the Refining Partnership and (ii) a services agreement, pursuant to which we provide certain services to the petroleum business.

On April 1, 2016, in connection with the closing of the East Dubuque Merger, we entered into a \$300.0 million senior term loan credit facility with the Nitrogen Fertilizer Partnership, with CRLLC as the lender. On June 10, 2016, the Nitrogen Fertilizer Partnership paid off the outstanding balance under the CRLLC Facility and the CRLLC Facility was terminated. Refer to Part I, Item 1, Note 15 ("Related Party Transactions") for further discussion of the CRLLC Facility.

Crude Oil Supply Agreement

On August 31, 2012, CRRM and Vitol entered into the Vitol Agreement. Under the agreement, Vitol supplies the petroleum business with crude oil and intermediation logistics, which helps the petroleum business to reduce its inventory position and mitigate crude oil pricing risk. The Vitol Agreement will automatically renew for successive one-year terms (each such term, a "Renewal Term") unless either party provides the other with notice of nonrenewal at least 180 days prior to the expiration of any Renewal Term. The Vitol Agreement currently extends through December 31, 2018.

Joint Venture with Velocity

On September 19, 2016, CRPLLC, an indirect wholly-owned subsidiary of the Refining Partnership, entered into an agreement with Velocity related to their joint ownership of VPP. VPP constructed, owns and operates a 12-inch crude oil pipeline with design capacity of approximately 65,000 barrel per day and with an estimated length of 25 miles with a connection to the Refining Partnership's Wynnewood refinery and a trucking terminal at Lowrance, Oklahoma. CRPLLC holds a 40% interest in VPP and has contributed a total of \$7.0 million to VPP during the pipeline construction, which was completed in April 2017. Velocity holds a 60% interest in VPP, serves as the day-to-day operator of VPP and contributed a total of \$10.5 million to VPP. On September 19, 2016, the Refining Partnership also entered into a transportation agreement with VPP for an initial term of 20 years under which VPP provides the Refining Partnership with crude oil transportation services for crude oil purchased within a defined geographic area, and the Refining Partnership entered into a terminalling services agreement with Velocity under which the Refining Partnership receives access to Velocity's terminal in Lowrance, Oklahoma to unload and pump crude oil into VPP's pipeline for an initial term of 20 years. The pipeline commenced operations in mid-April 2017 following completion of construction.

Factors Affecting Comparability

Our historical results of operations for the periods presented may not be comparable with prior periods or to our results of operations in the future for the reasons presented and discussed below.

Noncontrolling Interest

The noncontrolling interest reflected in our consolidated financial statements represented the interest in the Nitrogen Fertilizer Partnership and Refining Partnership held by public common unitholders. The non-controlling interest reflected on our Consolidated Balance Sheets is impacted by the net income of, and distributions from, the Nitrogen Fertilizer Partnership and Refining Partnership. During 2016 and as of September 30, 2017, the noncontrolling interest related to the Refining Partnership reflected in our Condensed Consolidated Financial Statements was approximately 34%. Immediately following the closing of the East Dubuque Merger on April 1, 2016 and as of September 30, 2017, the noncontrolling interest related to the Nitrogen Fertilizer Partnership reflected in our Condensed Consolidated Financial Statements was approximately 66%.

Distributions to CVR Partners Unitholders

The current policy of the board of directors of the Nitrogen Fertilizer Partnership's general partner is to distribute all of the available cash the Nitrogen Fertilizer Partnership generates each quarter. Available cash for distribution for each quarter will be determined by the board of directors of the Nitrogen Fertilizer Partnership's general partner following the end of such quarter, subject to the limitations discussed below. The board of directors of the Nitrogen Fertilizer Partnership's general partner calculates available cash for distribution starting with Adjusted Nitrogen Fertilizer EBITDA reduced for (i) cash needed for net cash interest expense (excluding capitalized interest) and debt service and other contractual obligations, (ii) maintenance capital expenditures, (iii) to the extent applicable, major scheduled turnaround expenses and reserves for future operating or capital needs that the board of directors of the Nitrogen Fertilizer Partnership's general partner deems necessary or appropriate, and (iv) expenses associated with the East Dubuque Merger, if any. Available cash for distribution may be increased by the release of previously established cash reserves, if any, at the discretion of the board of directors of the Nitrogen Fertilizer Partnership's general partner. Actual distributions are set by the board of directors of the Nitrogen Fertilizer Partnership's general partner. The board of directors of the Nitrogen Fertilizer Partnership's general partner may modify the cash distribution policy at any time, and the partnership agreement does not require the Nitrogen Fertilizer Partnership to make distributions at all.

Distributions to CVR Refining Unitholders

The current policy of the board of directors of the Refining Partnership's general partner is to distribute all of the available cash the Refining Partnership generates each quarter. Available cash for distribution for each quarter will be determined by the board of directors of the Refining Partnership's general partner following the end of such quarter and will generally equal Adjusted Petroleum EBITDA reduced for (i) cash needed for debt service, (ii) reserves for environmental and maintenance capital expenditures, (iii) reserves for major scheduled turnaround expenses and, (iv) to the extent applicable, reserves for future operating or capital needs that the board of directors of the Refining Partnership's general partner deems necessary or appropriate, if any. Available cash for distribution may be increased by the release of previously established cash reserves, if any, and other excess cash, at the discretion of the board of directors of the Refining Partnership's general partner. Actual distributions are set by the board of directors of the Refining Partnership's general partner. The board of directors of the Refining Partnership's general partner may modify the cash distribution policy at any time, and the partnership agreement does not require the Refining Partnership to make distributions at all.

On October 31, 2017, the board of directors of the Refining Partnership's general partner declared a cash distribution for the third quarter of 2017 to the Refining Partnership's unitholders of \$0.94 per common unit, or \$138.7 million in aggregate. The cash distribution will be paid on November 17, 2017 to unitholders of record at the close of business on November 10, 2017. We will receive \$91.5 million in respect of our common units.

CVR Energy Dividends

On August 14, 2017, the Company paid a cash dividend to stockholders of record at the close of business on August 7, 2017 for the second quarter of 2017 in the amount of \$0.50 per share, or \$43.4 million in the aggregate. IEP received \$35.6 million in respect of its common shares.

On October 31, 2017, our board of directors declared a dividend for the third quarter of 2017 of \$0.50 per share, or \$43.4 million in the aggregate. The dividend will be paid on November 17, 2017 to stockholders of record at the close of business on November 10, 2017.

East Dubuque Merger

On April 1, 2016, the Nitrogen Fertilizer Partnership completed the East Dubuque Merger, whereby it acquired the East Dubuque Facility. The consolidated financial statements and key operating metrics of the nitrogen fertilizer business include the results of the East Dubuque Facility beginning on April 1, 2016, the date of the closing of the acquisition. See Note 3 ("Acquisition") to Part I, Item 1 of this Report for further discussion.

Indebtedness

On April 1, 2016, as a result of the East Dubuque Merger, the Nitrogen Fertilizer Partnership acquired CVR Nitrogen, including its debt. During the second quarter of 2016, the Nitrogen Fertilizer Partnership used \$300.0 million of funds from the CRLLC facility to finance the payoff of the Nitrogen Fertilizer Partnership credit facility of \$125.0 million, payoff CVR Nitrogen's credit facility outstanding balance of \$49.1 million, and to fund the cash merger consideration and certain merger-related expenses. In June 2016, the Nitrogen Fertilizer Partnership issued \$645.0 million aggregate principal of 9.250% Senior Secured Notes due 2023 to refinance the substantial majority of its existing debt. As a result of the financing transactions, the Nitrogen Fertilizer Partnership's interest expense increased for the nine months ended September 30, 2017 as compared to the prior year. Further discussion regarding our indebtedness can be found in Note 10 ("Long-Term Debt") to Part I, Item 1 of this Report.

Results of Operations

The following tables summarize the financial data and key operating statistics for CVR and our two operating segments for the three and nine months ended September 30, 2017 and 2016. The results of operations for the East Dubuque Facility are included for the post acquisition period beginning April 1, 2016. The following data should be read in conjunction with our condensed consolidated financial statements and the notes thereto included elsewhere in this Report. All information in "Management's Discussion and Analysis of Financial Condition and Results of Operations," except for the balance sheet data as of December 31, 2016, is unaudited.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
(in millions, except per share data)				
Consolidated Statement of Operations Data				
Net sales	\$ 1,453.8	\$ 1,240.3	\$ 4,395.3	\$ 3,429.0
Cost of materials and other	1,132.4	1,005.7	3,582.2	2,719.3
Direct operating expenses(1)	161.1	129.5	423.4	409.2
Depreciation and amortization	51.3	48.1	151.7	134.5
Cost of sales	1,344.8	1,183.3	4,157.3	3,263.0
Selling, general and administrative expenses(1)	27.3	27.8	82.7	81.7
Depreciation and amortization	2.8	2.0	7.5	6.3
Operating income	78.9	27.2	147.8	78.0
Interest expense and other financing costs	(27.6)	(26.2)	(82.3)	(56.8)
Interest income	0.2	0.2	0.8	0.5
Loss on derivatives, net	(17.0)	(1.7)	(4.8)	(4.8)
Loss on extinguishment of debt	—	—	—	(5.1)
Other income, net	—	5.0	0.1	5.5
Income before income tax expense	34.5	4.5	61.6	17.3
Income tax expense	9.2	2.5	17.4	2.3
Net income	25.3	2.0	44.2	15.0
Less: Net income (loss) attributable to noncontrolling interest	3.1	(3.4)	10.3	(2.6)
Net income attributable to CVR Energy stockholders	\$ 22.2	\$ 5.4	\$ 33.9	\$ 17.6
Basic and diluted earnings per share	\$ 0.26	\$ 0.06	\$ 0.39	\$ 0.20
Dividends declared per share	\$ 0.50	\$ 0.50	\$ 1.50	\$ 1.50
Adjusted EBITDA(2)	\$ 90.9	\$ 58.2	\$ 209.0	\$ 158.8
Weighted-average common shares outstanding:				
Basic and diluted	86.8	86.8	86.8	86.8

	As of September 30, 2017		As of December 31, 2016	
	(in millions)		(audited)	
Balance Sheet Data				
Cash and cash equivalents	\$	849.1	\$	735.8
Working capital		765.0		749.6
Total assets		4,032.8		4,050.2
Total debt, including current portion		1,166.1		1,164.6
Total CVR Energy stockholders' equity		761.8		858.1

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
(in millions)				
Cash Flow Data				
Net cash flow provided by (used in):				
Operating activities	\$ 84.7	\$ 149.0	\$ 326.8	\$ 218.9
Investing activities	(21.6)	(16.9)	(80.4)	(172.0)
Financing activities	(43.9)	(60.1)	(133.1)	(49.4)
Net cash flow	\$ 19.2	\$ 72.0	\$ 113.3	\$ (2.5)
Capital expenditures for property, plant and equipment	\$ 22.5	\$ 22.8	\$ 79.9	\$ 105.6

(1) Amounts are shown exclusive of depreciation and amortization.

(2) **EBITDA and Adjusted EBITDA.** EBITDA represents net income attributable to CVR Energy stockholders before consolidated (i) interest expense and other financing costs, net of interest income, (ii) income tax expense and (iii) depreciation and amortization, less the portion of these adjustments attributable to noncontrolling interest. Adjusted EBITDA represents EBITDA adjusted for, as applicable, consolidated (i) FIFO impact, favorable, (ii) loss on extinguishment of debt, (iii) major scheduled turnaround expenses (that many of our competitors capitalize and thereby exclude from their measures of EBITDA and adjusted EBITDA), (iv) (gain) loss on derivatives, net, (v) current period settlements on derivative contracts, (vi) business interruption insurance recovery and (vii) expenses associated with the East Dubuque Merger, less the portion of these adjustments attributable to noncontrolling interest. EBITDA and Adjusted EBITDA are not recognized terms under GAAP and should not be substituted for net income or cash flow from operations. Management believes that EBITDA and Adjusted EBITDA enable investors to better understand and evaluate our ongoing operating results and allow for greater transparency in reviewing our overall financial, operational and economic performance. EBITDA and Adjusted EBITDA presented by other companies may not be comparable to our presentation, since each company may define these terms differently. EBITDA and Adjusted EBITDA represent EBITDA and Adjusted EBITDA that is attributable to CVR Energy stockholders.

Below is a reconciliation of net income attributable to CVR Energy stockholders to EBITDA and EBITDA to Adjusted EBITDA for the three and nine months ended September 30, 2017 and 2016:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
	(in millions)			
Net income attributable to CVR Energy stockholders	\$ 22.2	\$ 5.4	\$ 33.9	\$ 17.6
Add:				
Interest expense and other financing costs, net of interest income	27.4	26.0	81.5	56.3
Income tax expense	9.2	2.5	17.4	2.3
Depreciation and amortization	54.1	50.1	159.2	140.8
Adjustments attributable to noncontrolling interest	(38.3)	(35.9)	(112.7)	(90.3)
EBITDA	74.6	48.1	179.3	126.7
Add:				
FIFO impact, (favorable) unfavorable	(14.9)	7.7	0.8	(29.7)
Major scheduled turnaround expenses	24.2	—	40.0	38.1
Loss on derivatives, net	17.0	1.7	4.8	4.8
Current period settlement on derivative contracts(a)	—	6.7	1.1	35.2
Loss on extinguishment of debt	—	—	—	5.1
Expenses associated with the East Dubuque Merger(b)	—	0.7	—	3.1
Insurance recovery - business interruption	(1.1)	(2.1)	(1.1)	(2.1)
Adjustments attributable to noncontrolling interest	(8.9)	(4.6)	(15.9)	(22.4)
Adjusted EBITDA	\$ 90.9	\$ 58.2	\$ 209.0	\$ 158.8

(a) Represents the portion of gain on derivatives, net related to contracts that matured during the respective periods and settled with counterparties. There are no premiums paid or received at inception of the derivative contracts and upon settlement, there is no cost recovery associated with these contracts.

(b) Represents legal and other professional fees and other merger related expenses incurred by the Nitrogen Fertilizer Partnership in regards to the East Dubuque Merger. Refer to Part I, Item 1, Note 3 ("Acquisition") for further details.

Consolidated Results of Operations

Three Months Ended September 30, 2017 Compared to the Three Months Ended September 30, 2016 (Consolidated)

Net Sales. Consolidated net sales were \$1,453.8 million for the three months ended September 30, 2017 compared to \$1,240.3 million for the three months ended September 30, 2016. The increase in sales of \$213.5 million was largely the result of an increase in the petroleum segment's net sales of \$222.3 million due to significantly higher sales price as well as increased sales volume. For the three months ended September 30, 2017, the average sales price per gallon for gasoline of \$1.63 and \$1.67 for distillates increased by approximately 12.4% and 15.2%, respectively, as compared to the three months ended September 30, 2016. The nitrogen fertilizer segment's net sales decreased by approximately \$9.1 million primarily as a result of decreased sales prices for UAN and ammonia.

Cost of Materials and other. Consolidated cost of materials and other was \$1,132.4 million for the three months ended September 30, 2017, as compared to \$1,005.7 million for the three months ended September 30, 2016. The increase of \$126.7 million or 12.6% related to an increase of \$126.9 million at the petroleum segment, offset by a \$0.5 million decrease at the nitrogen fertilizer segment. The increase at the petroleum segment was primarily due to increases in consumed crude costs and products purchased for resale. The nitrogen fertilizer segment's cost of material and other decreased primarily due to lower third-party costs.

Direct Operating Expenses (Exclusive of Depreciation and Amortization). Consolidated direct operating expenses (exclusive of depreciation and amortization) were \$161.1 million for the three months ended September 30, 2017, as compared to \$129.5 million for the three months ended September 30, 2016. The increase of \$31.6 million was due to a \$23.9 million increase in the petroleum segment primarily related to the Wynnewood refinery turnaround costs. In addition, direct operating expenses (exclusive of depreciation and amortization) for the nitrogen fertilizer segment increased \$7.8 million primarily due to higher cost of inventory expensed coupled with turnaround costs.

Selling, General and Administrative Expenses (Exclusive of Depreciation and Amortization). Consolidated selling, general and administrative expenses (exclusive of depreciation and amortization) were \$27.3 million for the three months ended September 30, 2017, as compared to \$27.8 million for the three months ended September 30, 2016. The decrease of \$0.5 million was primarily attributable to lower IT consulting costs.

Operating Income. Consolidated operating income was \$78.9 million for the three months ended September 30, 2017, as compared to operating income of \$27.2 million for the three months ended September 30, 2016, an increase of \$51.7 million. The increase in operating income was primarily due to an increase of \$70.3 million in the petroleum segment, which was the result of higher refining margin and higher transportation fuel sales prices, partially offset by higher direct operating expenses. The nitrogen fertilizer segment's increase in operating loss of \$18.3 million for the three months ended September 30, 2017 was primarily a result of lower net sales, higher direct operating expenses and depreciation and amortization, partially offset by lower cost of materials and selling, general and administrative expenses.

Interest Expense. Consolidated interest expense for the three months ended September 30, 2017 was \$27.6 million, as compared to \$26.2 million for the three months ended September 30, 2016. The increase of \$1.4 million primarily resulted from higher capitalized interest during 2016, primarily related to the hydrogen plant project at the Coffeyville refinery, partially offset by higher interest on the intercompany credit facility in 2016.

Loss on Derivatives, net. For the three months ended September 30, 2017, the petroleum segment recorded a \$17.0 million net loss on derivatives. This compares to a \$1.7 million net loss on derivatives for the three months ended September 30, 2016. This change was primarily due to a significant increase (16.2 million barrels) in the volume of derivatives positions during the three months ended September 30, 2017. We enter into commodity hedging instruments in order to fix the price on a portion of our future crude oil purchases and to fix the margin on a portion of future production.

Income Tax Expense. Income tax expense for the three months ended September 30, 2017 was \$9.2 million or 26.7% of income before income taxes, as compared to income tax expense for the three months ended September 30, 2016 of \$2.5 million or 55.6% of income before income taxes. Our 2017 effective tax rate varies from the expected statutory rate primarily due to the reduction of income subject to tax associated with the noncontrolling ownership interests in CVR Refining's and CVR Partners' earnings (loss) and the benefits related to the domestic production activities deduction and state income tax credits.

Nine Months Ended September 30, 2017 Compared to the Nine Months Ended September 30, 2016 (Consolidated)

Net Sales. Consolidated net sales were \$4,395.3 million for the nine months ended September 30, 2017 compared to \$3,429.0 million for the nine months ended September 30, 2016. The increase of \$966.3 million was largely the result of an increase in the petroleum segment's net sales of \$985.6 million due to significantly higher sales prices as well as increased sales volumes. For the nine months ended September 30, 2017, the average sales price per gallon for gasoline of \$1.56 and \$1.58 for distillates increased by approximately 19.1% and 21.5%, respectively, as compared to the nine months ended September 30, 2016. The nitrogen fertilizer segment's net sales decreased \$18.8 million primarily from decreased sales prices for UAN and ammonia attributable to pricing fluctuation in the market.

Cost of Materials and Other. Consolidated cost of materials and other was \$3,582.2 million for the nine months ended September 30, 2017, as compared to \$2,719.3 million for the nine months ended September 30, 2016. The increase of \$862.9 million, or 31.7%, primarily resulted from an increase of \$872.0 million in the petroleum segment. The increase at the petroleum segment was due to increases in the cost of consumed crude oil and other feedstock and an increase in costs of products purchased for resale. The nitrogen fertilizer segment's cost of materials and other decreased \$8.9 million primarily due to lower costs from transactions with third parties.

Direct Operating Expenses (Exclusive of Depreciation and Amortization). Consolidated direct operating expenses (exclusive of depreciation and amortization) were \$423.4 million for the nine months ended September 30, 2017, as compared to \$409.2 million for the nine months ended September 30, 2016. The increase of \$14.2 million was due to an increase at the petroleum segment of \$10.6 million primarily related to increases in energy and utility costs, turnaround expenses and outside services. The nitrogen fertilizer segment's direct operating expenses (exclusive of depreciation and amortization) increased \$3.6 million primarily due to higher costs from transactions with third parties.

Selling, General and Administrative Expenses (Exclusive of Depreciation and Amortization). Consolidated selling, general and administrative expenses (exclusive of depreciation and amortization) were \$82.7 million for the nine months ended September 30, 2017, as compared to \$81.7 million for the nine months ended September 30, 2016. The increase of \$1.0 million was primarily attributable to higher share-based compensation expense and other personnel costs, partially offset by lower IT related costs.

Operating Income. Consolidated operating income was \$147.8 million for the nine months ended September 30, 2017, as compared to an operating income of \$78.0 million for the nine months ended September 30, 2016, an increase of \$69.8 million. The increase in operating income was primarily due to an increase of \$94.8 million in the petroleum segment, which was the result of higher refining margins, partially offset by an increase in direct operating expenses. The nitrogen fertilizer segment's operating income decreased \$24.2 million primarily as a result of lower net sales coupled with increased costs.

Interest Expense. Consolidated interest expense for the nine months ended September 30, 2017 was \$82.3 million, as compared to \$56.8 million for the nine months ended September 30, 2016. The increase of \$25.5 million primarily resulted from the nitrogen fertilizer segment's increased borrowings and a higher interest rate on the 2023 Notes.

Income Tax Expense. Income tax expense for the nine months ended September 30, 2017 was \$17.4 million or 28.2% of income before income taxes, as compared to income tax expense for the nine months ended September 30, 2016 of \$2.3 million or 13.3% of income before income taxes. Our 2017 effective tax rate varies from the expected statutory rate primarily due to the reduction of income subject to tax associated with the noncontrolling ownership interests in CVR Refining's and CVR Partners' earnings (loss) and the benefits related to the domestic production activities deduction and state income tax credits.

Petroleum Business Results of Operations

The petroleum business includes the operations of both the Coffeyville and Wynnewood refineries. The following tables below provide an overview of the petroleum business' results of operations, relevant market indicators and its key operating statistics for the three and nine months ended September 30, 2017 and 2016:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
(in millions)				
Petroleum Segment Summary Financial Results				
Net sales	\$ 1,385.8	\$ 1,163.5	\$ 4,147.5	\$ 3,161.9
Operating costs and expenses:				
Cost of materials and other	1,114.4	987.5	3,523.7	2,651.7
Direct operating expenses(1)(2)	99.2	97.0	271.9	267.2
Major scheduled turnaround expenses	21.7	—	37.4	31.5
Depreciation and amortization	31.8	31.9	96.8	93.7
Cost of sales	1,267.1	1,116.4	3,929.8	3,044.1
Selling, general and administrative expenses(1)	18.8	18.1	57.7	53.4
Depreciation and amortization	1.2	0.6	2.7	1.9
Operating income	98.7	28.4	157.3	62.5
Interest expense and other financing costs	(12.0)	(10.8)	(35.2)	(31.7)
Interest income	0.2	—	0.4	—
Loss on derivatives, net	(17.0)	(1.7)	(4.8)	(4.8)
Other income, net	0.1	—	0.1	—
Income before income tax expense	70.0	15.9	117.8	26.0
Income tax expense	—	—	—	—
Net income	\$ 70.0	\$ 15.9	\$ 117.8	\$ 26.0
Gross profit(3)	\$ 118.7	\$ 47.1	\$ 217.7	\$ 117.8
Refining margin(4)	\$ 271.4	\$ 176.0	\$ 623.8	\$ 510.2
Adjusted Petroleum EBITDA(5)	\$ 138.6	\$ 75.3	\$ 296.2	\$ 195.1

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
(dollars per barrel)				
Key Operating Statistics				
Per crude oil throughput barrel:				
Gross profit(3)	\$ 6.35	\$ 2.59	\$ 3.79	\$ 2.21
Refining margin(4)	14.52	9.66	10.86	9.55
FIFO impact, unfavorable (favorable)	(0.80)	0.43	0.01	(0.56)
Refining margin adjusted for FIFO impact(4)	13.72	10.09	10.87	8.99
Direct operating expenses and major scheduled turnaround expenses(1)(2)	6.47	5.33	5.38	5.59
Direct operating expenses and major scheduled turnaround expenses per barrel sold(1)(6)	\$ 6.26	\$ 5.04	\$ 5.08	\$ 5.24
Barrels sold (barrels per day)(6)	210,002	209,228	222,889	208,192

	Three Months Ended September 30,				Nine Months Ended September 30,			
	2017		2016		2017		2016	
		%		%		%		%
Refining Throughput and Production Data (bpd)								
Throughput:								
Sweet	196,342	91.9	176,404	85.3	198,750	89.8	174,594	85.4
Medium	—	—	1,983	1.0	—	—	2,321	1.1
Heavy sour	6,751	3.2	19,568	9.5	11,643	5.3	17,978	8.9
Total crude oil throughput	203,093	95.1	197,955	95.8	210,393	95.1	194,893	95.4
All other feedstocks and blendstocks	10,513	4.9	8,778	4.2	10,943	4.9	9,476	4.6
Total throughput	213,606	100.0	206,733	100.0	221,336	100.0	204,369	100.0
Production:								
Gasoline	105,712	49.5	106,120	51.2	112,268	50.6	106,774	52.2
Distillate	89,655	42.0	84,669	40.9	92,046	41.5	83,101	40.6
Other (excluding internally produced fuel)	18,107	8.5	16,390	7.9	17,385	7.9	14,738	7.2
Total refining production (excluding internally produced fuel)	213,474	100.0	207,179	100.0	221,699	100.0	204,613	100.0
Product price (dollars per gallon):								
Gasoline	\$ 1.63		\$ 1.45		\$ 1.56		\$ 1.31	
Distillate	1.67		1.45		1.58		1.30	

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
	Market Indicators (dollars per barrel)			
West Texas Intermediate (WTI) NYMEX	\$ 48.20	\$ 44.94	\$ 49.36	\$ 41.53
Crude Oil Differentials:				
WTI less WTS (light/medium sour)	0.97	1.47	1.15	0.82
WTI less WCS (heavy sour)	10.48	14.23	11.42	13.59
NYMEX Crack Spreads:				
Gasoline	20.42	13.73	17.74	16.24
Heating Oil	21.05	14.34	17.24	13.04
NYMEX 2-1-1 Crack Spread	20.73	14.03	17.49	14.64
PADD II Group 3 Basis:				
Gasoline	(1.18)	0.48	(2.37)	(3.59)
Ultra Low Sulfur Diesel	0.85	1.01	(0.44)	(0.38)
PADD II Group 3 Product Crack Spread:				
Gasoline	19.23	14.21	15.37	12.65
Ultra Low Sulfur Diesel	21.90	15.35	16.80	12.65
PADD II Group 3 2-1-1	20.57	14.78	16.09	12.65

(1) Amounts are shown exclusive of depreciation and amortization.

(2) Direct operating expense is presented on a per crude oil throughput barrel basis. In order to derive the direct operating expenses per crude oil throughput barrel, we utilize total direct operating expenses, which do not include depreciation or amortization expense, and divide by the applicable number of crude oil throughput barrels for the period.

- (3) Gross profit, a U.S. generally accepted accounting principles ("GAAP") measure, is calculated as the difference between net sales and cost of materials and other, direct operating expenses (exclusive of depreciation and amortization), major scheduled turnaround expenses, and depreciation and amortization. Each of the components used in this calculation are taken directly from the petroleum business' financial results. In order to derive the gross profit per crude oil throughput barrel, we utilize the total dollar figures for gross profit as derived above and divide by the applicable number of crude oil throughput barrels for the period.
- (4) Refining margin per crude oil throughput barrel is a measurement calculated as the difference between net sales and cost of materials and other. Refining margin is a non-GAAP measure that we believe is important to investors in evaluating the refineries' performance as a general indication of the amount above the cost of materials and other at which it is able to sell refined products. Each of the components used in this calculation (net sales and cost of materials and other) are taken directly from the petroleum business' financial results. Our calculation of refining margin may differ from similar calculations of other companies in the industry, thereby limiting its usefulness as a comparative measure. In order to derive the refining margin per crude oil throughput barrel, we utilize the total dollar figures for refining margin as derived above and divide by the applicable number of crude oil throughput barrels for the period. We believe that refining margin and refining margin per crude oil throughput barrel are important to enable investors to better understand and evaluate the petroleum business' ongoing operating results and for greater transparency in the review of our overall financial, operational and economic performance.

Refining margin per crude oil throughput barrel adjusted for FIFO impact is a measurement calculated as the difference between net sales and cost of materials and other adjusted for FIFO impact. Refining margin adjusted for FIFO impact is a non-GAAP measure that we believe is important to investors in evaluating our refineries' performance as a general indication of the amount above the cost of materials and other (taking into account the impact of our utilization of FIFO) at which it is able to sell refined products. Our calculation of refining margin adjusted for FIFO impact may differ from calculations of other companies in the industry, thereby limiting its usefulness as a comparative measure. Under our FIFO accounting method, changes in crude oil prices can cause fluctuations in the inventory valuation of our crude oil, work in process and finished goods, thereby resulting in a favorable FIFO impact when crude oil prices increase and an unfavorable FIFO impact when crude oil prices decrease. In order to derive the refining margin per crude oil throughput barrel adjusted for FIFO impact, we utilize the total dollar figures for refining margin adjusted for FIFO impact as derived above and divide by the applicable number of crude oil throughput barrels for the period. We believe that refining margin adjusted for FIFO impact and refining margin per crude oil throughput barrel adjusted for FIFO impact are important to enable investors to better understand and evaluate the petroleum business' ongoing operating results and allow for greater transparency in the review of our overall financial, operational and economic performance.

The calculation of refining margin, refining margin adjusted for FIFO impact, refining margin per crude oil throughput barrel and refining margin adjusted for FIFO impact per crude oil throughput barrel (each a non-GAAP financial measure), including a reconciliation to the most directly comparable GAAP financial measure, for the three and nine months ended September 30, 2017 and 2016 is as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
	(in millions)			
Net sales	\$ 1,385.8	\$ 1,163.5	\$ 4,147.5	\$ 3,161.9
Cost of materials and other	1,114.4	987.5	3,523.7	2,651.7
Direct operating expenses (exclusive of depreciation and amortization and major scheduled turnaround expenses as reflected below)	99.2	97.0	271.9	267.2
Major scheduled turnaround expenses	21.7	—	37.4	31.5
Depreciation and amortization	31.8	31.9	96.8	93.7
Gross profit	118.7	47.1	217.7	117.8
Add:				
Direct operating expenses (exclusive of depreciation and amortization and major scheduled turnaround expenses as reflected below)	99.2	97.0	271.9	267.2
Major scheduled turnaround expenses	21.7	—	37.4	31.5
Depreciation and amortization	31.8	31.9	96.8	93.7
Refining margin	271.4	176.0	623.8	510.2
FIFO impact, unfavorable (favorable)	(14.9)	7.7	0.8	(29.7)
Refining margin adjusted for FIFO impact	\$ 256.5	\$ 183.7	\$ 624.6	\$ 480.5

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
Total crude oil throughput barrels per day	203,093	197,955	210,393	194,893
Days in the period	92	92	273	274
Total crude oil throughput barrels	18,684,556	18,211,860	57,437,289	53,400,682

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
Refining margin	\$ 271.4	\$ 176.0	\$ 623.8	\$ 510.2
Divided by: crude oil throughput barrels	18.7	18.2	57.4	53.4
Refining margin per crude oil throughput barrel	\$ 14.52	\$ 9.66	\$ 10.86	\$ 9.55

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
Refining margin adjusted for FIFO impact	\$ 256.5	\$ 183.7	\$ 624.6	\$ 480.5
Divided by: crude oil throughput barrels	18.7	18.2	57.4	53.4
Refining margin adjusted for FIFO impact per crude oil throughput barrel	\$ 13.72	\$ 10.09	\$ 10.87	\$ 8.99

- (5) Petroleum EBITDA represents net income (loss) for the petroleum segment before (i) interest expense and other financing costs, net of interest income, (ii) income tax expense and (iii) depreciation and amortization. Adjusted Petroleum EBITDA represents Petroleum EBITDA adjusted for (i) FIFO impact, (favorable) unfavorable, (ii) major scheduled turnaround expenses (that many of our competitors capitalize and thereby exclude from their measures of EBITDA and adjusted EBITDA), (iii) (gain) loss on derivatives, net and (iv) current period settlements on derivative contracts.

We present Adjusted Petroleum EBITDA because it is the starting point for calculating the Refining Partnership's available cash for distribution. Petroleum EBITDA and Adjusted Petroleum EBITDA are not recognized terms under GAAP and should not be substituted for net income as a measure of performance. Management believes that Petroleum EBITDA and Adjusted Petroleum EBITDA enable investors to better understand the Refining Partnership's ability to make distributions to its common unitholders, help investors evaluate the petroleum segment's ongoing operating results and allow for greater transparency in reviewing its overall financial, operational and economic performance. Petroleum EBITDA and Adjusted Petroleum EBITDA presented by other companies may not be comparable to our presentation, since each company may define these terms differently. Below is a reconciliation of net income for the petroleum segment to Petroleum EBITDA and Petroleum EBITDA to Adjusted Petroleum EBITDA for the three and nine months ended September 30, 2017 and 2016:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
	(in millions)			
Petroleum:				
Petroleum net income	\$ 70.0	\$ 15.9	\$ 117.8	\$ 26.0
Add:				
Interest expense and other financing costs, net of interest income	11.8	10.8	34.8	31.7
Income tax expense	—	—	—	—
Depreciation and amortization	33.0	32.5	99.5	95.6
Petroleum EBITDA	114.8	59.2	252.1	153.3
Add:				
FIFO impacts, (favorable) unfavorable(a)	(14.9)	7.7	0.8	(29.7)
Major scheduled turnaround expenses(b)	21.7	—	37.4	31.5
Loss on derivatives, net	17.0	1.7	4.8	4.8
Current period settlements on derivative contracts(c)	—	6.7	1.1	35.2
Adjusted Petroleum EBITDA	\$ 138.6	\$ 75.3	\$ 296.2	\$ 195.1

- (a) FIFO is the petroleum business' basis for determining inventory value on a GAAP basis. Changes in crude oil prices can cause fluctuations in the inventory valuation of crude oil, work in process and finished goods thereby resulting in a favorable FIFO impact when crude oil prices increase and an unfavorable FIFO impact when crude oil prices decrease. The FIFO impact is calculated based upon inventory values at the beginning of the accounting period and at the end of the accounting period. In order to derive the FIFO impact per crude oil throughput barrel, we utilize the total dollar figures for the FIFO impact and divide by the number of crude oil throughput barrels for the period.
- (b) Represents expense associated with major scheduled turnaround activities at the Wynnewood refinery and the Coffeyville refinery during 2017 and 2016, respectively.
- (c) Represents the portion of (gain) loss on derivatives, net related to contracts that matured during the respective periods and settled with counterparties. There are no premiums paid or received at inception of the derivative contracts and upon settlement, there is no cost recovery associated with these contracts.
- (6) Direct operating expense is presented on a per barrel sold basis. Barrels sold are derived from the barrels produced and shipped from the refineries. We utilize total direct operating expenses, which does not include depreciation or amortization expense, and divide by the applicable number of barrels sold for the period to derive the metric.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
(in millions)				
Coffeyville Refinery Financial Results				
Net sales	\$ 939.3	\$ 788.1	\$ 2,750.5	\$ 2,094.1
Cost of materials and other	767.7	669.9	2,349.7	1,763.3
Direct operating expenses (exclusive of depreciation and amortization and major scheduled turnaround expenses as reflected below)	56.7	50.7	154.9	144.5
Major scheduled turnaround expenses	—	—	—	31.5
Depreciation and amortization	17.4	17.7	53.8	51.2
Gross profit	97.5	49.8	192.1	103.6
Plus:				
Direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization as reflected below)	56.7	50.7	154.9	176.0
Depreciation and amortization	17.4	17.7	53.8	51.2
Refining margin	171.6	118.2	400.8	330.8
FIFO impact, (favorable) unfavorable	(10.1)	4.0	1.5	(22.4)
Refining margin adjusted for FIFO impact	\$ 161.5	\$ 122.2	\$ 402.3	\$ 308.4

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
(dollars per barrel)				
Coffeyville Refinery Key Operating Statistics				
Per crude oil throughput barrel:				
Gross profit	\$ 8.26	\$ 4.15	\$ 5.37	\$ 3.12
Refining margin(1)	\$ 14.52	\$ 9.86	\$ 11.21	\$ 9.94
Direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization)	\$ 4.80	\$ 4.23	\$ 4.33	\$ 5.29
Direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization) per barrel sold	\$ 4.50	\$ 3.93	\$ 3.99	\$ 4.80
Barrels sold (barrels per day)	136,776	140,256	142,238	133,729

	Three Months Ended September 30,				Nine Months Ended September 30,			
	2017		2016		2017		2016	
		%		%		%		%
Coffeyville Refinery Throughput and Production Data (bpd)								
Throughput:								
Sweet	121,710	89.6	110,825	81.0	119,361	85.8	101,803	79.2
Medium	—	—	—	—	—	—	1,641	1.3
Heavy sour	6,751	5.0	19,568	14.3	11,643	8.4	17,978	13.9
Total crude oil throughput	128,461	94.6	130,393	95.3	131,004	94.2	121,422	94.4
All other feedstocks and blendstocks	7,415	5.4	6,399	4.7	8,124	5.8	7,193	5.6
Total throughput	135,876	100.0	136,792	100.0	139,128	100.0	128,615	100.0
Production:								
Gasoline	67,598	49.1	70,013	50.3	70,697	50.1	67,298	51.5
Distillate	57,654	41.9	57,839	41.6	58,927	41.7	54,192	41.5
Other (excluding internally produced fuel)	12,355	9.0	11,286	8.1	11,619	8.2	9,191	7.0
Total refining production (excluding internally produced fuel)	137,607	100.0	139,138	100.0	141,243	100.0	130,681	100.0

(1) The calculation of refining margin and refining margin adjusted for FIFO impact per crude oil throughput barrel for the three and nine months ended September 30, 2017 and 2016 is as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
Total crude oil throughput barrels per day	128,461	130,393	131,004	121,422
Days in the period	92	92	273	274
Total crude oil throughput barrels	11,818,412	11,996,156	35,764,092	33,269,628
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
Refining margin	\$ 171.6	\$ 118.2	\$ 400.8	\$ 330.8
Divided by: crude oil throughput barrels	11.8	12.0	35.8	33.3
Refining margin per crude oil throughput barrel	\$ 14.52	\$ 9.86	\$ 11.21	\$ 9.94
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
Refining margin adjusted for FIFO impact	\$ 161.5	\$ 122.2	\$ 402.3	\$ 308.4
Divided by: crude oil throughput barrels	11.8	12.0	35.8	33.3
Refining margin adjusted for FIFO impact per crude oil throughput barrel	\$ 13.66	\$ 10.19	\$ 11.25	\$ 9.27

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
(in millions)				
Wynnewood Refinery Financial Results				
Net sales	\$ 445.3	\$ 374.3	\$ 1,393.7	\$ 1,064.4
Cost of materials and other	346.9	317.7	1,174.6	888.5
Direct operating expenses (exclusive of depreciation and amortization and major scheduled turnaround expenses as reflected below)	42.5	46.3	117.0	122.7
Major scheduled turnaround expenses	21.7	—	37.4	—
Depreciation and amortization	12.9	12.7	38.5	37.9
Gross profit (loss)	21.3	(2.4)	26.2	15.3
Plus:				
Direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization as reflected below)	64.2	46.3	154.4	122.7
Depreciation and amortization	12.9	12.7	38.5	37.9
Refining margin	98.4	56.6	219.1	175.9
FIFO impact, (favorable) unfavorable	(4.8)	3.8	(0.7)	(7.3)
Refining margin adjusted for FIFO impact	\$ 93.6	\$ 60.4	\$ 218.4	\$ 168.6

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
(dollars per barrel)				
Wynnewood Refinery Key Operating Statistics				
Per crude oil throughput barrel:				
Gross profit (loss)	\$ 3.10	\$ (0.39)	\$ 1.21	\$ 0.76
Refining margin(1)	\$ 14.33	\$ 9.10	\$ 10.11	\$ 8.74
Direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization)	\$ 9.35	\$ 7.45	\$ 7.13	\$ 6.10
Direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization) per barrel sold	\$ 9.53	\$ 7.29	\$ 7.01	\$ 6.01
Barrels sold (barrels per day)	73,226	68,971	80,651	74,463

	Three Months Ended September 30,				Nine Months Ended September 30,			
	2017		2016		2017		2016	
		%		%		%		%
Wynnewood Refinery Throughput and Production Data (bpd)								
Throughput:								
Sweet	74,632	96.0	65,579	93.8	79,389	96.6	72,791	96.1
Medium	—	—	1,983	2.8	—	—	680	0.9
Heavy sour	—	—	—	—	—	—	—	—
Total crude oil throughput	74,632	96.0	67,562	96.6	79,389	96.6	73,471	97.0
All other feedstocks and blendstocks	3,098	4.0	2,379	3.4	2,819	3.4	2,283	3.0
Total throughput	77,730	100.0	69,941	100.0	82,208	100.0	75,754	100.0
Production:								
Gasoline	38,114	50.2	36,107	53.1	41,571	51.6	39,476	53.4
Distillate	32,001	42.2	26,830	39.4	33,119	41.2	28,909	39.1
Other (excluding internally produced fuel)	5,752	7.6	5,104	7.5	5,766	7.2	5,547	7.5
Total refining production (excluding internally produced fuel)	75,867	100.0	68,041	100.0	80,456	100.0	73,932	100.0

(1) The calculation of refining margin and refining margin adjusted for FIFO impact per crude oil throughput barrel for the three and nine months ended September 30, 2017 and 2016 is as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
Total crude oil throughput barrels per day	74,632	67,562	79,389	73,471
Days in the period	92	92	273	274
Total crude oil throughput barrels	6,866,144	6,215,704	21,673,197	20,131,054
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
Refining margin	\$ 98.4	\$ 56.6	\$ 219.1	\$ 175.9
Divided by: crude oil throughput barrels	6.9	6.2	21.7	20.1
Refining margin per crude oil throughput barrel	\$ 14.33	\$ 9.10	\$ 10.11	\$ 8.74
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
Refining margin adjusted for FIFO impact	\$ 93.6	\$ 60.4	\$ 218.4	\$ 168.6
Divided by: crude oil throughput barrels	6.9	6.2	21.7	20.1
Refining margin adjusted for FIFO impact per crude oil throughput barrel	\$ 13.63	\$ 9.71	\$ 10.08	\$ 8.38

Three Months Ended September 30, 2017 Compared to the Three Months Ended September 30, 2016 (Petroleum Business)

Net Sales. Petroleum net sales were \$1,385.8 million for the three months ended September 30, 2017 compared to \$1,163.5 million for the three months ended September 30, 2016. The increase of \$222.3 million or 19.1%, was largely the result of higher sales prices for transportation fuels and by-products, as well as an increase in sales volumes. For the three months ended September 30, 2017, the average sales price per gallon for gasoline of \$1.63 increased by approximately 12.4% as compared to \$1.45 for the three months ended September 30, 2016, and the average sales price per gallon for distillates of \$1.67 for the three months ended September 30, 2017 increased by approximately 15.2%, as compared to \$1.45 for the three months ended September 30, 2016. Overall sales volumes increased approximately 3.4% for the three months ended September 30, 2017, as compared to the three months ended September 30, 2016.

The following table demonstrates the impact of changes in sales volumes and sales prices for gasoline and distillates for the three months ended September 30, 2017 compared to the three months ended September 30, 2016:

	Three Months Ended September 30, 2017			Three Months Ended September 30, 2016			Total Variance		Price Variance	Volume Variance
	Volume(1)	\$ per barrel	Sales \$(2)	Volume(1)	\$ per barrel	Sales \$(2)	Volume(1)	Sales \$(2)		
	(in millions)									
Gasoline	10.6	\$ 68.45	\$ 722.7	10.2	\$ 61.00	\$ 624.7	0.4	\$ 98.0	\$ 78.7	\$ 19.3
Distillate	8.6	\$ 70.11	\$ 599.8	8.0	\$ 60.79	\$ 489.2	0.6	\$ 110.6	\$ 79.8	\$ 30.8

(1) Barrels in millions

(2) Sales dollars in millions

Cost of Materials and Other. Cost of materials and other includes cost of crude oil, other feedstocks and blendstocks, purchased products for resale, RINs, transportation and distribution costs. Petroleum cost of materials and other was \$1,114.4 million for the three months ended September 30, 2017 compared to \$987.5 million for the three months ended September 30, 2016. The increase of \$126.9 million, or 12.9%, was primarily the result of an increase in the cost of consumed crude oil and other feedstock and an increase in cost of products purchased for resale. The increase in consumed crude oil costs was due to a combined increase in crude oil throughput volume and prices. The WTI benchmark crude price increased approximately 7.3% from the three months ended September 30, 2016. The average cost per barrel of crude oil consumed for the three months ended September 30, 2017 was \$48.13 compared to \$44.58 for the comparable period of 2016, an increase of approximately 8.0%. Our crude oil throughput volume increased by approximately 2.6% for the three months ended September 30, 2017 as compared to the three months ended September 30, 2016. The increase in cost of other feedstocks was primarily due to an increase in purchase prices for the three months ended September 30, 2017 as compared to the three months ended September 30, 2016. The increase in costs of products purchased for resale was due primarily to an increase in purchased volumes for the three months ended September 30, 2017 as compared to the three months ended September 30, 2016. Under the FIFO method of accounting, changes in crude oil prices can also cause fluctuations in the inventory valuation of our crude oil, work in process and finished goods, thereby resulting in a favorable or unfavorable FIFO inventory impact when crude oil prices increase or decrease. For the three months ended September 30, 2017, the petroleum business had a favorable FIFO inventory impact of \$14.9 million compared to an unfavorable FIFO inventory impact of \$7.7 million for the comparable period of 2016.

Refining margin per barrel of crude oil throughput increased to \$14.52 for the three months ended September 30, 2017 from \$9.66 for the three months ended September 30, 2016. Refining margin adjusted for FIFO impact was \$13.72 per crude oil throughput barrel for the three months ended September 30, 2017, as compared to \$10.09 per crude oil throughput barrel for the three months ended September 30, 2016. Gross profit per barrel increased to \$6.35 per barrel for the three months ended September 30, 2017 as compared to a gross profit per barrel of \$2.59 in the comparative period in 2016. The increase in refining margin and gross profit per barrel was primarily due to an increase in the sales prices of gasoline and distillates, which was partially offset by unfavorable changes in the gasoline and distillate basis. The NYMEX 2-1-1 crack spread for the three months ended September 30, 2017 was \$20.73 per barrel, an increase of approximately 47.8% over the NYMEX 2-1-1 crack spread of \$14.03 per barrel for the three months ended September 30, 2016. The Group 3 gasoline basis was \$(1.18) per barrel for the three months ended September 30, 2017 as compared to \$0.48 per barrel for the three months ended September 30, 2016. The Group 3 distillate basis was \$0.85 per barrel for the three months ended September 30, 2017 as compared to \$1.01 per barrel for the three months ended September 30, 2016.

Direct Operating Expenses (Exclusive of Depreciation and Amortization). Direct operating expenses (exclusive of depreciation and amortization) include costs associated with the actual operations of our refineries, such as energy and utility costs, property taxes, catalyst and chemical costs, repairs and maintenance, labor and environmental compliance costs. Direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization) were \$120.9 million for the three months ended September 30, 2017 compared to \$97.0 million for the three months ended September 30, 2016. The increase of \$23.9 million was primarily the result of an increase in turnaround costs (\$21.7 million) and an increase in labor costs (\$1.2 million). Our Wynnewood refinery went into a major scheduled turnaround in late September 2017. Direct operating expenses per barrel of crude oil throughput for the three months ended September 30, 2017 increased to \$6.47 per barrel, as compared to \$5.33 per barrel for the three months ended September 30, 2016. The increase in the direct operating expenses per barrel of crude oil throughput is primarily a function of higher direct operating costs.

Operating Income. Petroleum operating income was \$98.7 million for the three months ended September 30, 2017, as compared to operating income of \$28.4 million for the three months ended September 30, 2016. The increase of \$70.3 million was primarily the result of an increase in the refining margin of \$95.4 million due to higher transportation fuel prices, which was partially offset by increases in direct operating expenses of \$23.9 million and selling, general and administrative expenses of \$0.7 million.

Loss on Derivatives, net. For the three months ended September 30, 2017, we recorded a \$17.0 million net loss on derivatives, as compared to a \$1.7 million net loss on derivatives for the three months ended September 30, 2016. This change was primarily due to a significant increase (16.2 million barrels) in the volume of derivatives positions during the three months ended September 30, 2017. We enter into commodity hedging instruments in order to fix the price on a portion of our future crude oil purchases and to fix the margin on a portion of future production.

Nine Months Ended September 30, 2017 Compared to the Nine Months Ended September 30, 2016 (Petroleum Business)

Net Sales. Petroleum net sales were \$4,147.5 million for the nine months ended September 30, 2017 compared to \$3,161.9 million for the nine months ended September 30, 2016. The increase of \$985.6 million, or 31.2%, was largely the result of higher sales prices for transportation fuels and by-products, as well as increased sales volumes. For the nine months ended September 30, 2017, our average sales price per gallon for gasoline of \$1.56, increased by approximately 19.1%, as compared to \$1.31 for the nine months ended September 30, 2016, and our average sales price per gallon for distillates of \$1.58 for the nine months ended September 30, 2017, increased by approximately 21.5%, as compared to \$1.30 for the nine months ended September 30, 2016. Overall sales volumes increased approximately 7.2% for the nine months ended September 30, 2017, as compared to the nine months ended September 30, 2016. Sales volumes for the nine months ended September 30, 2016 were impacted by decreased production as a result of the second phase of the major scheduled turnaround completed at the Coffeyville refinery during the first quarter of 2016.

The following table demonstrates the impact of changes in sales volumes and sales prices for gasoline and distillates for the nine months ended September 30, 2017 compared to the nine months ended September 30, 2016.

	Nine Months Ended September 30, 2017			Nine Months Ended September 30, 2016			Total Variance		Price Variance	Volume Variance
	Volume(1)	\$ per barrel	Sales \$(2)	Volume(1)	\$ per barrel	Sales \$(2)	Volume(1)	Sales \$(2)		
	(in millions)									
Gasoline	33.6	\$ 65.54	\$ 2,202.9	31.5	\$ 54.94	1,731.5	2.1	\$ 471.4	\$ 356.2	\$ 115.2
Distillate	25.9	\$ 66.48	\$ 1,723.9	23.8	\$ 54.50	1,294.5	2.1	\$ 429.4	\$ 310.7	\$ 118.7

(1) Barrels in millions

(2) Sales dollars in millions

Cost of Materials and Other. Cost of materials and other includes cost of crude oil, other feedstocks and blendstocks, purchased products for resale, RINs and transportation and distribution costs. Petroleum cost of materials and other was \$3,523.7 million for the nine months ended September 30, 2017 compared to \$2,651.7 million for the nine months ended September 30, 2016. The increase of \$872.0 million, or 32.9%, was primarily the result of increases in the cost of consumed crude oil and other feedstock and an increase in costs of products purchased for resale. The increase in consumed crude oil costs was due to a combined increase in crude oil throughput volume and crude prices. The WTI benchmark crude price increased approximately 18.9% from the nine months ended September 30, 2016. Our average cost per barrel of crude oil consumed for the nine months ended September 30, 2017 was \$49.15 compared to \$39.81 for the comparable period of 2016, an increase of approximately 23.5%. Our crude oil throughput volume increased by approximately 7.6% for the nine months ended September 30, 2017 as compared to the nine months ended September 30, 2016 primarily due to the completion of the second phase of the major scheduled turnaround at the Coffeyville refinery in the first quarter of 2016. The increase in the cost of other feedstocks was primarily due to an increase in purchase prices for the nine months ended September 30, 2017 as compared to the nine months ended September 30, 2016. Under the FIFO method of accounting, changes in crude oil prices can also cause fluctuations in the inventory valuation of our crude oil, work in process and finished goods, thereby resulting in a favorable or unfavorable FIFO inventory impact when crude oil prices increase or decrease. For the nine months ended September 30, 2017, we had an unfavorable FIFO inventory impact of \$0.8 million compared to a favorable FIFO inventory impact of \$29.7 million for the comparable period of 2016.

Refining margin per barrel of crude oil throughput increased to \$10.86 for the nine months ended September 30, 2017 from \$9.55 for the nine months ended September 30, 2016. Refining margin adjusted for FIFO impact was \$10.87 per crude oil throughput barrel for the nine months ended September 30, 2017, as compared to \$8.99 per crude oil throughput barrel for the nine months ended September 30, 2016. Gross profit per barrel increased to \$3.79 per barrel for the nine months ended September 30, 2017, as compared to \$2.21 per barrel in the comparative period in 2016. The increase in refining margin and gross profit per barrel was primarily due to a higher spread between crude oil and transportation fuels pricing and a favorable change in gasoline basis. The NYMEX 2-1-1 crack spread for the nine months ended September 30, 2017 was \$17.49 per barrel, an increase of approximately 19.5% over the NYMEX 2-1-1 crack spread of \$14.64 per barrel for the nine months ended September 30, 2016. The Group 3 gasoline basis was \$(2.37) per barrel for the nine months ended September 30, 2017 as compared to \$(3.59) per barrel for the nine months ended September 30, 2016. Partially offsetting these favorable impacts were increases in consumed crude oil and other feedstock costs and the cost of products purchased for resale.

Direct Operating Expenses (Exclusive of Depreciation and Amortization). Direct operating expenses (exclusive of depreciation and amortization) for the petroleum business include costs associated with the actual operations of the refineries, such as energy and utility costs, property taxes, catalyst and chemical costs, repairs and maintenance, labor and environmental compliance costs. Petroleum direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization) were \$309.3 million for the nine months ended September 30, 2017 compared to \$298.7 million for the nine months ended September 30, 2016. The increase of \$10.6 million was the result of an increase in energy and utility costs (\$9.8 million), turnaround expenses (\$5.9 million) and outside services (\$3.3 million). These increases were partially offset by a decrease in production chemicals (\$3.7 million) and labor costs (\$2.7 million). Direct operating expenses per barrel of crude oil throughput for the nine months ended September 30, 2017 decreased to \$5.38 per barrel, as compared to \$5.59 per barrel for the nine months ended September 30, 2016. The decrease in the direct operating expenses per barrel of crude oil throughput is primarily a function of higher throughput rates.

Operating Income. Petroleum operating income was \$157.3 million for the nine months ended September 30, 2017, as compared to operating income of \$62.5 million for the nine months ended September 30, 2016. The increase of \$94.8 million was primarily the result of an increase in refining margin of \$113.6 million due to higher sales prices for transportation fuels and by-products, which was partially offset by increases in direct operating expenses (\$10.6 million), selling, general and administrative expenses (\$4.3 million) and depreciation and amortization expense (\$3.9 million).

Nitrogen Fertilizer Business Results of Operations

The tables below provide an overview of the nitrogen fertilizer business' results of operations, relevant market indicators and key operating statistics for the three and nine months ended September 30, 2017 and 2016. The results of operations for the East Dubuque Facility are included for the post acquisition period beginning April 1, 2016.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
(in millions)				
<u>Nitrogen Fertilizer Business Financial Results</u>				
Net sales	\$ 69.4	\$ 78.5	\$ 252.6	\$ 271.4
Operating costs and expenses:				
Cost of materials and other	19.4	19.9	63.3	72.2
Direct operating expenses(1)	37.8	32.5	111.4	103.8
Major scheduled turnaround expenses	2.5	—	2.6	6.6
Depreciation and amortization	19.5	16.4	54.9	41.0
Cost of sales	79.2	68.8	232.2	223.6
Selling, general and administrative(1)	6.1	7.3	18.8	22.0
Operating income (loss)	(15.9)	2.4	1.6	25.8
Interest expense and other financing costs	(15.7)	(15.6)	(47.1)	(32.8)
Loss on extinguishment of debt	—	—	—	(5.1)
Other income, net	—	—	0.1	—
Loss before income tax expense	(31.6)	(13.2)	(45.4)	(12.1)
Income tax expense	—	0.2	—	0.3
Net loss	\$ (31.6)	\$ (13.4)	\$ (45.4)	\$ (12.4)
Adjusted Nitrogen Fertilizer EBITDA(2)	\$ 5.0	\$ 17.4	\$ 58.1	\$ 74.4

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
Nitrogen Fertilizer Segment Key Operating Statistics:				
Consolidated sales (thousand tons):				
Ammonia	65.3	47.7	201.8	145.7
UAN	299.1	296.0	951.6	902.4
Consolidated product pricing at gate (dollars per ton)(3):				
Ammonia	\$ 214	\$ 345	\$ 287	\$ 385
UAN	\$ 138	\$ 154	\$ 158	\$ 187
Consolidated production volume (thousand tons):				
Ammonia (gross produced)(4)	180.7	200.8	615.2	485.9
Ammonia (net available for sale)(4)	46.2	60.3	203.7	121.0
UAN	306.6	317.2	962.3	861.9
Feedstock:				
Pet coke used in production (thousand tons)	114.3	126.8	371.0	384.4
Pet coke used in production (dollars per ton)	\$ 18	\$ 13	\$ 18	\$ 14
Natural gas used in production (thousands of MMBtu)	1,555.4	2,075.5	5,780.7	3,471.6
Natural gas used in production (dollars per MMBtu)(5)	\$ 3.12	\$ 2.97	\$ 3.25	\$ 2.75
Natural gas in cost of materials and other (thousands of MMBtu)	1,934.9	1,679.5	5,898.3	2,742.5
Natural gas in cost of materials and other (dollars per MMBtu)(5)	\$ 3.15	\$ 2.92	\$ 3.30	\$ 2.68
Coffeyville Fertilizer Facility on-stream factors(6):				
Gasification	96.3%	95.9%	98.0%	97.2%
Ammonia	93.5%	94.7%	96.7%	96.2%
UAN	93.9%	94.1%	92.6%	93.1%
East Dubuque Facility on-stream factors(6):				
Ammonia	76.3%	94.4%	91.9%	81.7%
UAN	77.1%	92.9%	91.5%	81.1%
Market Indicators:				
Ammonia — Southern Plains (dollars per ton)	\$ 238	\$ 315	\$ 314	\$ 368
Ammonia — Corn belt (dollars per ton)	\$ 303	\$ 372	\$ 364	\$ 432
UAN — Corn belt (dollars per ton)	\$ 165	\$ 188	\$ 192	\$ 218
Natural gas NYMEX (dollars per MMBtu)	\$ 2.95	\$ 2.79	\$ 3.05	\$ 2.35

(1) Amounts are shown exclusive of major scheduled turnaround expenses and depreciation and amortization.

(2) Nitrogen Fertilizer EBITDA represents nitrogen fertilizer net loss adjusted for (i) interest expense and other financing costs, net of interest income, (ii) income tax expense and (iii) depreciation and amortization. Adjusted Nitrogen Fertilizer EBITDA represents Nitrogen Fertilizer EBITDA adjusted for (i) major scheduled turnaround expenses, (ii) gain or loss on extinguishment of debt, (iii) loss on disposition of assets, (iv) business interruption insurance recovery and (v) expenses associated with the East Dubuque Merger, when applicable. We present Adjusted Nitrogen Fertilizer EBITDA because we have found it helpful to consider an operating measure that excludes amounts relating to transactions not reflective of the Nitrogen Fertilizer Partnership's core operations, such as major scheduled turnaround expense, loss on extinguishment of debt, expenses associated with the East Dubuque Merger and business interruption insurance recovery.

We also present Adjusted Nitrogen Fertilizer EBITDA because it is the starting point for calculating the Nitrogen Fertilizer Partnership's available cash for distribution. Adjusted Nitrogen Fertilizer EBITDA is not a recognized term under GAAP and should not be substituted for net loss as a measure of performance. Management believes that Nitrogen Fertilizer EBITDA and Adjusted Nitrogen Fertilizer EBITDA enable investors and analysts to better understand the Nitrogen Fertilizer Partnership's ability to make distributions to its common unitholders, help investors and analysts evaluate its ongoing operating results and allow for greater transparency in reviewing our overall financial, operational and economic performance by allowing investors to evaluate the same information used by management. Nitrogen Fertilizer EBITDA and Adjusted Nitrogen Fertilizer EBITDA presented by other companies may not be comparable to our presentation, since each company may define those terms differently. Below is a reconciliation of net income for the nitrogen fertilizer segment to Nitrogen Fertilizer EBITDA and Adjusted Nitrogen Fertilizer EBITDA for the three and nine months ended September 30, 2017 and 2016:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
	(in millions)			
Nitrogen Fertilizer:				
Nitrogen fertilizer net loss	\$ (31.6)	\$ (13.4)	\$ (45.4)	\$ (12.4)
Add:				
Interest expense and other financing costs, net	15.7	15.6	47.1	32.8
Income tax expense	—	0.2	—	0.3
Depreciation and amortization	19.5	16.4	54.9	41.0
Nitrogen Fertilizer EBITDA	3.6	18.8	56.6	61.7
Add:				
Major scheduled turnaround expenses	2.5	—	2.6	6.6
Loss on extinguishment of debt	—	—	—	5.1
Expenses associated with the East Dubuque Merger	—	0.7	—	3.1
Less:				
Insurance recovery - business interruption	(1.1)	(2.1)	(1.1)	(2.1)
Adjusted Nitrogen Fertilizer EBITDA	<u>\$ 5.0</u>	<u>\$ 17.4</u>	<u>\$ 58.1</u>	<u>\$ 74.4</u>

(3) Product pricing at gate represents net sales less freight revenue divided by product sales volume in tons and is shown in order to provide a pricing measure that is comparable across the fertilizer industry.

(4) Gross tons produced for ammonia represent total ammonia produced, including ammonia produced that was upgraded into other fertilizer products. Net tons available for sale represent ammonia available for sale that was not upgraded into other fertilizer products.

(5) The cost per MMBtu excludes derivative activity, when applicable. The impact of natural gas derivative activity during the three and nine months ended September 30, 2017 and 2016 was not material.

(6) On-stream factor is the total number of hours operated divided by the total number of hours in the reporting period and is a measure of operating efficiency.

Coffeyville Facility

The Linde air separation unit experienced a shut down during the second quarter of 2017. Following the Linde outage, the Coffeyville Facility UAN unit experienced a number of operational challenges, resulting in approximately 11 days of UAN downtime during the second quarter of 2017. Excluding the impact of the Linde air separation unit outage at the Coffeyville Facility, the UAN unit on-stream factors at the Coffeyville Facility would have been 96.7% for the nine months ended September 30, 2017.

East Dubuque Facility

Excluding the impact of approximately 14 days of downtime associated with the 2017 full facility turnaround at the East Dubuque Facility, the on-stream factors at the East Dubuque Facility would have been 91.3% for ammonia and 91.8% for UAN for the three months ended September 30, 2017 and 96.9% for ammonia and 96.4% for UAN for the nine months ended September 30, 2017.

Excluding the impact of approximately 28 days of downtime associated with the 2016 full facility turnaround at the East Dubuque Facility, the on-stream factors at the East Dubuque Facility would have been 97.2% for ammonia and 96.2% for UAN for the six months ended September 30, 2016.

Three Months Ended September 30, 2017 Compared to the Three Months Ended September 30, 2016 (Nitrogen Fertilizer Business)

Net Sales. Nitrogen fertilizer net sales were \$69.4 million for the three months ended September 30, 2017 compared to \$78.5 million for the three months ended September 30, 2016. The decrease of \$9.1 million for the three months ended September 30, 2017 compared to the three months ended September 30, 2016 was primarily attributable to the lower ammonia sales prices (\$8.4 million), lower UAN sales prices (\$5.7 million), partially offset by higher ammonia sales volumes (\$6.2 million). For the three months ended September 30, 2017, UAN and ammonia made up \$48.8 million and \$14.9 million of the Nitrogen Fertilizer Partnership's consolidated net sales, respectively, including freight. This compared to UAN and ammonia net sales of \$53.9 million and \$17.1 million, respectively, for the three months ended September 30, 2016, including freight.

The following table demonstrates the impact of changes in sales volumes and pricing for the primary components of net sales for the three months ended September 30, 2017 as compared to the three months ended September 30, 2016:

	Price Variance	Volume Variance
(in millions)		
UAN	\$ (5.7)	\$ 0.6
Ammonia	\$ (8.4)	\$ 6.2

The decrease in UAN and ammonia sales prices for the three months ended September 30, 2017 compared to the three months ended September 30, 2016 was primarily attributable to pricing fluctuation in the market.

Cost of Materials and Other. Nitrogen fertilizer cost of materials and other consists primarily of freight and distribution expenses, feedstock expenses, purchased ammonia and purchased hydrogen. Cost of materials and other for the three months ended September 30, 2017 was \$19.4 million compared to \$19.9 million for the three months ended September 30, 2016. The \$0.5 million decrease was primarily due to lower costs from transactions with third parties of \$1.7 million, partially offset by an increase in transactions with affiliates of \$1.2 million. The lower third-party costs incurred were primarily the result of decreased distribution costs due to the timing of regulatory railcar repairs and maintenance. The higher affiliate costs incurred were primarily the result of increased hydrogen purchases from a subsidiary of CVR Refining.

Direct Operating Expenses (Exclusive of Depreciation and Amortization). Nitrogen fertilizer direct operating expenses (exclusive of depreciation and amortization) consist primarily of energy and utility costs, direct costs of labor, property taxes, plant-related maintenance services, and environmental and safety compliance costs as well as catalyst and chemical costs. Direct operating expenses (exclusive of depreciation and amortization) for the three months ended September 30, 2017 were \$40.3 million as compared to \$32.5 million for the three months ended September 30, 2016. The \$7.8 million increase was primarily due to the third quarter 2017 turnaround at East Dubuque, which resulted in turnaround expenses of \$2.5 million. The remaining increase was primarily due to having to expense fixed operating costs while idle as well as higher sales tons in the three months ended September 30, 2017 as compared to 2016, resulting in higher cost of inventory expensed during 2017.

Operating Income (loss). Nitrogen fertilizer operating loss was \$15.9 million for the three months ended September 30, 2017, as compared to operating income of \$2.4 million for the three months ended September 30, 2016. The decrease of \$18.3 million was the result of a decrease in net sales (\$9.1 million), an increase in direct operating expenses (\$7.8 million), an increase in depreciation and amortization (\$3.1 million), partially offset by a decrease in cost of materials and other (\$0.5 million) and a decrease in selling general and administrative expenses (\$1.2 million).

Nine Months Ended September 30, 2017 Compared to the Nine Months Ended September 30, 2016 (Nitrogen Fertilizer Business)

The nine months ended September 30, 2017 is not comparable to the nine months ended September 30, 2016 due to the acquisition of the East Dubuque Facility on April 1, 2016. Where appropriate, the East Dubuque Facility has been excluded from comparative discussions.

Net Sales. Nitrogen fertilizer net sales were \$252.6 million for the nine months ended September 30, 2017 compared to \$271.4 million for the nine months ended September 30, 2016.

Excluding the East Dubuque Facility, net sales were \$150.1 million for the nine months ended September 30, 2017 compared to \$179.0 million for the nine months ended September 30, 2016. The decrease of \$28.9 million was primarily attributable to the lower UAN sales prices (\$22.4 million), lower ammonia sales prices (\$3.7 million) and lower UAN sales volumes (\$3.6 million), partially offset by higher ammonia sales volumes (\$3.6 million) at the Coffeyville Facility. For the nine months ended September 30, 2017, UAN and ammonia made up \$131.8 million and \$13.4 million of the Nitrogen Fertilizer Partnership's consolidated net sales, respectively, including freight. This compared to UAN and ammonia consolidated net sales of \$157.8 million and \$13.5 million, respectively, for the nine months ended September 30, 2016, including freight.

The following table demonstrates the impact of changes in sales volumes and pricing for the primary components of net sales at the Coffeyville Fertilizer Facility for the nine months ended September 30, 2017 as compared to the nine months ended September 30, 2016:

	Price Variance	Volume Variance
(in millions)		
UAN	\$ (22.4)	\$ (3.6)
Ammonia	\$ (3.7)	\$ 3.6

The decrease in UAN and ammonia sales prices at the Coffeyville Fertilizer Facility for the nine months ended September 30, 2017 compared to the nine months ended September 30, 2016 was primarily attributable to pricing fluctuation in the market.

Cost of Materials and Other. Nitrogen fertilizer cost of materials and other consists primarily of freight and distribution expenses, feedstock expenses, purchased ammonia and purchased hydrogen. Cost of materials and other for the nine months ended September 30, 2017 was \$63.3 million, compared to \$72.2 million for the nine months ended September 30, 2016.

Excluding the East Dubuque facility, cost of materials and other was \$41.3 million for the nine months ended September 30, 2017 compared to \$42.3 million for the nine months ended September 30, 2016. The decrease of \$1.0 million is attributable to lower costs from transactions with third parties of \$4.7 million, partially offset by higher transactions with affiliates of \$3.7 million. The decrease in transactions with third parties was primarily the result of decreased distribution costs due to the timing of regulatory railcar repairs and maintenance (\$2.7 million) and lower freight expense (\$1.3 million). The increase in transactions with affiliates was primarily the result of increased hydrogen purchases from a subsidiary of CVR Refining (\$3.0 million).

Direct Operating Expenses (Exclusive of Depreciation and Amortization). Nitrogen fertilizer direct operating expenses (exclusive of depreciation and amortization) consist primarily of energy and utility costs, direct costs of labor, property taxes, plant-related maintenance services, environmental and safety compliance costs as well as catalyst and chemical costs. Direct operating expenses (exclusive of depreciation and amortization) for the nine months ended September 30, 2017 were \$114.0 million as compared to \$110.4 million for the nine months ended September 30, 2016.

Excluding the East Dubuque facility, direct operating expenses were \$69.1 million for the nine months ended September 30, 2017 compared to \$68.6 million for the nine months ended September 30, 2016. The increase of \$0.5 million was attributable to higher costs from transactions with third parties of \$1.5 million, partially offset by a decrease in transactions with affiliates of \$1.0 million. The increase in transactions with third parties was primarily the result of increased electrical prices (\$3.6 million), partially offset by lower repairs and maintenance (\$2.3 million).

Interest Expense. Nitrogen fertilizer interest expense was \$47.1 million for the nine months ended September 30, 2017, as compared to \$32.8 million for the nine months ended September 30, 2016. The increase of \$14.3 million was primarily due to lower outstanding debt in the first quarter of 2016.

Liquidity and Capital Resources

Although results are consolidated for financial reporting, CVR Energy, CVR Refining and CVR Partners are independent business entities and operate with independent capital structures. Since the Nitrogen Fertilizer Partnership IPO in April 2011 and the Refining Partnership IPO in January 2013, with the exception of cash distributions paid to us by the Nitrogen Fertilizer Partnership and the Refining Partnership, the cash needs of the Nitrogen Fertilizer Partnership and the Refining Partnership have been met independently from the cash needs of CVR Energy and each other with a combination of existing cash and cash equivalent balances, cash generated from operating activities and credit facility borrowings. The Refining Partnership's and the Nitrogen Fertilizer Partnership's ability to generate sufficient cash flows from their respective operating activities and to then make distributions on their common units, including to us (which we will need to pay salaries, reporting expenses and other expenses as well as dividends on our common stock) will continue to be primarily dependent on producing or purchasing, and selling, sufficient quantities of refined and nitrogen fertilizer products at margins sufficient to cover fixed and variable expenses.

We believe that the petroleum business and the nitrogen fertilizer business' cash flows from operations and existing cash and cash equivalents, along with borrowings under their respective existing credit facilities, as necessary, will be sufficient to satisfy the anticipated cash requirements associated with their existing operations for at least the next 12 months, and that we have sufficient cash resources to fund our operations for at least the next 12 months. However, future capital expenditures and other cash requirements could be higher than we currently expect as a result of various factors, including the Refining Partnership using its cash to satisfy its unfulfilled RIN obligation. Additionally, the ability to generate sufficient cash from operating activities depends on future performance, which is subject to general economic, political, financial, competitive and other factors beyond our control.

Depending on the needs of our businesses, contractual limitations and market conditions, we may from time to time seek to issue equity securities, incur additional debt, issue debt securities, or otherwise refinance our existing debts. There can be no assurance that we will seek to do any of the foregoing or that we will be able to do any of the foregoing on terms acceptable to us or at all.

Cash Balances and Other Liquidity

As of September 30, 2017, we had consolidated cash and cash equivalents of \$849.1 million. Of that amount, \$218.7 million was cash and cash equivalents of CVR Energy, \$560.4 million was cash and cash equivalents of the Refining Partnership and \$70.0 million was cash and cash equivalents of the Nitrogen Fertilizer Partnership. As of October 30, 2017, we had consolidated cash and cash equivalents of approximately \$824.3 million.

The Refining Partnership's Amended and Restated ABL Credit Facility provides the Refining Partnership with borrowing availability of up to \$400.0 million with an incremental facility, subject to compliance with a borrowing base. The Amended and Restated ABL Credit Facility is scheduled to mature on December 20, 2017. The Refining Partnership is in the process of negotiating an amendment and extension to the Amended and Restated ABL Credit Facility, which it expects to finalize in November 2017. The proceeds of the loans may be used for capital expenditures and working capital and general corporate purposes of the Refining Partnership and the credit facility provides for loans and letters of credit in an amount up to the aggregate availability under the facility, subject to meeting certain borrowing base conditions, with sub-limits of 10% of the total facility commitment for swingline loans and 90% of the total facility commitment for letters of credit. As of September 30, 2017, the Refining Partnership had \$371.6 million available under the Amended and Restated ABL Credit Facility. Availability under the Amended and Restated ABL Credit Facility was limited by borrowing base conditions.

The Refining Partnership and the Nitrogen Fertilizer Partnership have distribution policies in which they generally distribute all of their available cash each quarter, within 60 days after the end of each quarter. The Refining Partnership's distributions began with the quarter ended March 31, 2013 and were adjusted to exclude the period from January 1, 2013 through January 22, 2013 (the period preceding the closing of the Refining Partnership IPO). The distributions are made to all common unitholders. At September 30, 2017, we held approximately 66% and 34% of the Refining Partnership's and the Nitrogen Fertilizer Partnership's common units outstanding, respectively. The amount of each distribution will be determined pursuant to each general partner's calculation of available cash for the applicable quarter. The general partner of each partnership, as a non-economic interest holder, is not entitled to receive cash distributions. As a result of each general partner's distribution policy, funds held by the Refining Partnership and the Nitrogen Fertilizer Partnership will not be available for our use, and we as a unitholder will receive our applicable percentage of the distribution of funds within 60 days following each quarter. The Refining Partnership and the Nitrogen Fertilizer Partnership do not have a legal obligation to pay distributions and there is no guarantee that they will pay any distributions on the units in any quarter.

Borrowing Activities

2023 Notes. On June 10, 2016, the Nitrogen Fertilizer Partnership and CVR Nitrogen Finance Corporation issued \$645.0 million aggregate principal amount of the 2023 Notes. The 2023 Notes were issued at a \$16.1 million discount, which is being amortized over the term of the 2023 Notes as interest expense using the effective-interest method. As a result of the issuance, approximately \$9.4 million of debt issuance costs were incurred, which are being amortized over the term of the 2023 Notes as interest expense using the effective-interest method.

The 2023 Notes are guaranteed on a senior secured basis by all of the Partnership's existing subsidiaries.

At any time prior to June 15, 2019, the Nitrogen Fertilizer Partnership may on any of one or more occasions redeem up to 35% of the aggregate principal amount of the 2023 Notes issued under the indenture governing the 2023 Notes in an amount not greater than the net proceeds of one or more public equity offerings at a redemption price of 109.250% of the principal amount of the 2023 Notes, plus any accrued and unpaid interest to the date of redemption. Prior to June 15, 2019, the Nitrogen Fertilizer Partnership may on any one or more occasions redeem all or part of the 2023 Notes at a redemption price equal to the sum of: (i) the principal amount thereof, plus (ii) the Make Whole Premium, as defined in the indenture governing the 2023 Notes, at the redemption date, plus any accrued and unpaid interest to the applicable redemption date.

On and after June 15, 2019, the Nitrogen Fertilizer Partnership may on any one or more occasions redeem all or a part of the 2023 Notes at the redemption prices (expressed as percentages of principal amount) set forth below, plus any accrued and unpaid interest to the applicable redemption date on such Notes, if redeemed during the 12-month period beginning on June 15 of the years indicated below:

Year	Percentage
2019	104.625%
2020	102.313%
2021 and thereafter	100.000%

Upon the occurrence of certain change of control events as defined in the indenture (including the sale of all or substantially all of the properties or assets of the Nitrogen Fertilizer Partnership and its subsidiaries taken as a whole), each holder of the 2023 Notes will have the right to require that the Nitrogen Fertilizer Partnership repurchase all or a portion of such holder's 2023 Notes in cash at a purchase price equal to 101% of the aggregate principal amount thereof plus any accrued and unpaid interest to the date of repurchase.

The 2023 Notes contain customary covenants for a financing of this type that, among other things, restrict the Nitrogen Fertilizer Partnership's ability and the ability of certain of its subsidiaries to: (i) sell assets; (ii) pay distributions on, redeem or repurchase the Nitrogen Fertilizer Partnership's units or redeem or repurchase its subordinated debt; (iii) make investments; (iv) incur or guarantee additional indebtedness or issue preferred units; (v) create or incur certain liens; (vi) enter into agreements that restrict distributions or other payments from the Nitrogen Fertilizer Partnership's restricted subsidiaries to the Nitrogen Fertilizer Partnership; (vii) consolidate, merge or transfer all or substantially all of the Nitrogen Fertilizer Partnership's assets; (viii) engage in transactions with affiliates; and (ix) create unrestricted subsidiaries. Most of the foregoing covenants would cease to apply at such time that the 2023 Notes are rated investment grade by both Standard & Poor's Ratings Services and Moody's Investors Service, Inc. However, such covenants would be reinstated if the 2023 Notes subsequently lost their investment grade rating. In addition, the indenture contains customary events of default, the occurrence of which would result in, or permit the trustee or the

holders of at least 25% of the 2023 Notes to cause, the acceleration of the 2023 Notes, in addition to the pursuit of other available remedies.

The indenture governing the 2023 Notes prohibits the Nitrogen Fertilizer Partnership from making distributions to unitholders if any default or event of default (as defined in the indenture) exists. In addition, the indenture limits the Nitrogen Fertilizer Partnership's ability to pay distributions to unitholders. The covenants will apply differently depending on the Nitrogen Fertilizer Partnership's fixed charge coverage ratio (as defined in the indenture). If the fixed charge coverage ratio is not less than 1.75 to 1.0, the Nitrogen Fertilizer Partnership will generally be permitted to make restricted payments, including distributions to unitholders, without substantive restriction. If the fixed charge coverage ratio is less than 1.75 to 1.0, the Nitrogen Fertilizer Partnership will generally be permitted to make restricted payments, including distributions to unitholders, up to an aggregate \$75.0 million basket plus certain other amounts referred to as "incremental funds" under the indenture. As of September 30, 2017, the ratio was less than 1.75 to 1.0. Restricted payments have been made, and \$72.7 million of the basket was available as of September 30, 2017. The Nitrogen Fertilizer Partnership was in compliance with the covenants contained in the 2023 Notes as of September 30, 2017.

2022 Notes. On October 23, 2012, Refining LLC and Coffeyville Finance issued \$500.0 million aggregate principal amount of the 2022 Notes. The net proceeds from the offering of the 2022 Notes were used to purchase all of the First Lien Secured Notes due 2015 through a tender offer and settled redemption in the fourth quarter of 2012. The debt issuance costs of the 2022 Notes totaled approximately \$8.7 million and are being amortized over the term of the 2022 Notes as interest expense using the effective-interest amortization method. As of September 30, 2017, the 2022 Notes had an aggregate principal balance and a net carrying value of \$500.0 million.

The 2022 Notes are unsecured and are fully and unconditionally guaranteed by CVR Refining and each of Refining LLC's existing domestic subsidiaries (other than the co-issuer, Coffeyville Finance) on a joint and several basis.

The 2022 Notes bear interest at a rate of 6.5% per annum and mature on November 1, 2022, unless earlier redeemed or repurchased by the issuers. Interest is payable on the 2022 Notes semi-annually on May 1 and November 1 of each year, to holders of record at the close of business on April 15 and October 15, as the case may be, immediately preceding each such interest payment date.

The issuers have the right to redeem the 2022 Notes at the redemption prices (expressed as percentages of principal amount) set forth below, plus any accrued and unpaid interest to the applicable redemption date on such 2022 Notes, if redeemed during the 12-month period beginning on November 1 of the years indicated below:

Year	Percentage
2017	103.250%
2018	102.167%
2019	101.083%
2020 and thereafter	100.000%

Prior to November 1, 2017, some or all of the 2022 Notes may be redeemed at a price equal to 100% of the principal amount thereof, plus a make-whole premium and any accrued and unpaid interest.

In the event of a "change of control," the issuers are required to offer to buy back all of the 2022 Notes at 101% of their principal amount. A change of control is generally defined as (i) the direct or indirect sale or transfer (other than by a merger) of all or substantially all of the assets of Refining LLC to any person other than qualifying owners (as defined in the indenture), (ii) liquidation or dissolution of Refining LLC, or (iii) any person, other than a qualifying owner, directly or indirectly acquiring 50% of the membership interest of Refining LLC.

The indenture governing the 2022 Notes imposes covenants that restrict the ability of the credit parties to (i) issue debt, (ii) incur or otherwise cause liens to exist on any of their property or assets, (iii) declare or pay dividends, repurchase equity, or make payments on subordinated or unsecured debt, (iv) make certain investments, (v) sell certain assets, (vi) merge or consolidate with or into another entity, or sell all or substantially all of their assets, and (vii) enter into certain transactions with affiliates. Most of the foregoing covenants would cease to apply at such time that the 2022 Notes are rated investment grade by both Standard & Poor's Rating Services and Moody's Investors Services, Inc. However, such covenants would be reinstated if the 2022 Notes subsequently lost their investment grade rating. In addition, the indenture contains customary events of default, the occurrence of which would result in, or permit the trustee or the holders of at least 25% of the 2022 Notes to cause, the acceleration of the 2022 Notes, in addition to the pursuit of other available remedies.

The indenture governing the 2022 Notes prohibits the Refining Partnership from making distributions to its unitholders if any default or event of default (as defined in the indenture) exists. In addition, the indenture limits the Refining Partnership's ability to pay distributions to unitholders. The covenants will apply differently depending on the Refining Partnership's fixed charge coverage ratio (as defined in the indenture). If the fixed charge coverage ratio is not less than 2.5 to 1.0, the Refining Partnership will generally be permitted to make restricted payments, including distributions to its unitholders, without substantive restriction. If the fixed charge coverage ratio is less than 2.5 to 1.0, the Refining Partnership will generally be permitted to make restricted payments, including distributions to its unitholders, up to an aggregate \$100.0 million basket plus certain other amounts referred to as "incremental funds" under the indenture. The Refining Partnership was in compliance with the covenants as of September 30, 2017, and the ratio was satisfied (not less than 2.5 to 1.0).

Amended and Restated Asset Based (ABL) Credit Facility. On December 20, 2012, the Credit Parties entered into the Amended and Restated ABL Credit Facility with Wells Fargo Bank, National Association, as administrative agent and collateral agent for a syndicate of lenders. The Amended and Restated ABL Credit Facility replaced CRLLC's prior ABL credit facility. Under the Amended and Restated ABL Credit Facility, the Refining Partnership assumed CRLLC's position as borrower and CRLLC's obligations under the Amended and Restated ABL Credit Facility upon the closing of the Refining Partnership IPO on January 23, 2013. The Amended and Restated ABL Credit Facility is a \$400.0 million asset-based revolving credit facility, with sub-limits for letters of credit and swingline loans of \$360.0 million and \$40.0 million, respectively. The Amended and Restated ABL Credit Facility also includes a \$200.0 million uncommitted incremental facility. The Amended and Restated ABL Credit Facility permits the payment of distributions, subject to the following conditions: (i) no default or event of default exists, (ii) excess availability and projected excess availability at all times during the three-month period following the distribution exceeds 20% of the lesser of the borrowing base and the total commitments; provided, that, if excess availability and projected excess availability for the six-month period following the distribution is greater than 25% at all times, then the following condition in clause (iii) will not apply, and (iii) the fixed charge coverage ratio for the immediately preceding 12-month period shall be equal to or greater than 1.10 to 1.00. The Amended and Restated ABL Credit Facility has a five-year maturity and will be used for working capital and other general corporate purposes (including permitted acquisitions). As noted above, the Refining Partnership is currently in negotiations to amend and extend the facility, which it expects to finalize in November 2017.

Borrowings under the Amended and Restated ABL Credit Facility bear interest at either a base rate or LIBOR plus an applicable margin. The applicable margin is (i) (a) 1.75% for LIBOR borrowings and (b) 0.75% for prime rate borrowings, in each case if quarterly average excess availability exceeds 50% of the lesser of the borrowing base and the total commitments and (ii) (a) 2.00% for LIBOR borrowings and (b) 1.00% for prime rate borrowings, in each case if quarterly average excess availability is less than or equal to 50% of the lesser of the borrowing base and the total commitments. The Amended and Restated ABL Credit Facility also requires the payment of customary fees, including an unused line fee of (i) 0.40% if the daily average amount of loans and letters of credit outstanding is less than 50% of the lesser of the borrowing base and the total commitments and (ii) 0.30% if the daily average amount of loans and letters of credit outstanding is equal to or greater than 50% of the lesser of the borrowing base and the total commitments. The Refining Partnership is also required to pay customary letter of credit fees equal to, for standby letters of credit, the applicable margin on LIBOR loans on the maximum amount available to be drawn under and, for commercial letters of credit, the applicable margin on LIBOR loans less 0.50% on the maximum amount available to be drawn under, and customary facing fees equal to 0.125% of the face amount of, each letter of credit.

The Amended and Restated ABL Credit Facility also contains customary covenants for a financing of this type that limit the ability of the Credit Parties and their subsidiaries to, among other things, incur liens, engage in a consolidation, merger, purchase or sale of assets, pay dividends, incur indebtedness, make advances, investments and loans, enter into affiliate transactions, issue equity interests, or create subsidiaries and unrestricted subsidiaries. The Amended and Restated ABL Credit Facility also contains a fixed charge coverage ratio financial covenant, as defined therein. The Refining Partnership was in compliance with the covenants of the Amended and Restated ABL Credit Facility as of September 30, 2017.

Asset Based (ABL) Credit Facility. On September 30, 2016, the Nitrogen Fertilizer Partnership entered into the ABL Credit Facility with a group of lenders and UBS AG, Stamford Branch, as administrative agent and collateral agent. The ABL Credit Facility is a senior secured asset based revolving credit facility in an aggregate principal amount of availability of up to \$50.0 million with an incremental facility, which permits an increase in borrowings of up to \$25.0 million in the aggregate subject to additional lender commitments and certain other conditions. The proceeds of the loans may be used for capital expenditures and working capital and general corporate purposes of the Nitrogen Fertilizer Partnership and its subsidiaries. The ABL Credit Facility provides for loans and standby letters of credit in an amount up to the aggregate availability under the facility, subject to meeting certain borrowing base conditions, with sub-limits of the lesser of 10% of the total facility commitment and \$5.0 million for swingline loans and \$10.0 million for letters of credit. The ABL Credit Facility has a five-year maturity and will be used for working capital and other general corporate purposes.

At the option of the borrowers, loans under the ABL Credit Facility initially bear interest at an annual rate equal to (i) 2.00% plus LIBOR or (ii) 1.00% plus a base rate, subject to a 0.50% step-down based on the previous quarter's excess availability.

The Nitrogen Fertilizer Partnership must also pay a commitment fee on the unutilized commitments to the lenders under the ABL Credit Facility equal to (a) 0.375% per annum for the first full calendar quarter after the closing date and (b) thereafter, (i) 0.375% per annum if utilization under the facility is less than 50% of the total commitments and (ii) 0.25% per annum if utilization under the facility is equal to or greater than 50% of the total commitments. The borrowers must also pay customary letter of credit fees equal to 2.00%, subject to a 0.50% step-down based on the previous quarter's excess availability, on the maximum amount available to be drawn under, and customary facing fees equal to 0.125% of the face amount of, each letter of credit.

The ABL Credit Facility also contains customary covenants for a financing of this type that limit the ability of the Credit Parties and their subsidiaries to, among other things, incur liens, engage in a consolidation, merger, purchase or sale of assets, pay dividends, incur indebtedness, make advances, investments and loans, enter into affiliate transactions, issue equity interests, or create subsidiaries and unrestricted subsidiaries. The ABL Credit Facility also contains a fixed charge coverage ratio financial covenant, as defined therein. The Nitrogen Fertilizer Partnership was in compliance with the covenants of the ABL Credit Facility as of September 30, 2017.

As of September 30, 2017, the Nitrogen Fertilizer Partnership and its subsidiaries had availability under the ABL Credit Facility of \$47.6 million. There were no borrowings outstanding under the ABL Credit Facility as of September 30, 2017.

Capital Spending

We divide the petroleum business and the nitrogen fertilizer business' capital spending needs into two categories: maintenance and growth. Maintenance capital spending includes only non-discretionary maintenance projects and projects required to comply with environmental, health and safety regulations. We undertake discretionary capital spending based on the expected return on incremental capital employed. Discretionary capital projects generally involve an expansion of existing capacity, improvement in product yields and/or a reduction in direct operating expenses. Major scheduled turnaround expenses are expensed when incurred.

The following table summarizes our total actual capital expenditures for the nine months ended September 30, 2017 and current estimated capital expenditures for the full year 2017 by operating segment and major category. These estimates may change as a result of unforeseen circumstances or a change in our plans, and amounts may not be spent in the manner allocated below:

	Nine Months Ended September 30, 2017	2017 Estimate
	(in millions)	
Petroleum Business (the Refining Partnership):		
<i>Coffeyville refinery:</i>		
Maintenance	\$ 30.7	\$ 45.0
Growth	5.9	10.0
Coffeyville refinery total capital spending	36.6	55.0
<i>Wynnewood refinery:</i>		
Maintenance	24.3	45.0
Growth	2.2	5.0
Wynnewood refinery total capital spending	26.5	50.0
<i>Other Petroleum:</i>		
Maintenance	3.0	5.0
Growth	—	—
Other petroleum total capital spending	3.0	5.0
Petroleum business total capital spending	66.1	110.0
Nitrogen Fertilizer Business (the Nitrogen Fertilizer Partnership):		
Maintenance	11.1	15.0
Growth	0.3	—
Nitrogen fertilizer business total capital spending	11.4	15.0
Corporate	2.4	5.0
Total capital spending	\$ 79.9	\$ 130.0

The petroleum business' and the nitrogen fertilizer business' estimated capital expenditures are subject to change due to unanticipated changes in the cost, scope and completion time for capital projects. For example, they may experience increases/decreases in labor or equipment costs necessary to comply with government regulations or to complete projects that sustain or improve the profitability of the refineries or nitrogen fertilizer plants. The petroleum business and nitrogen fertilizer business may also accelerate or defer some capital expenditures from time to time. Capital spending for the Nitrogen Fertilizer Partnership's nitrogen fertilizer business and the Refining Partnership's petroleum business is determined by each partnership's respective board of directors of its general partner.

Cash Flows

The following table sets forth our consolidated cash flows for the periods indicated below:

	Nine Months Ended September 30,	
	2017	2016
	(unaudited)	
	(in millions)	
Net cash provided by (used in):		
Operating activities	\$ 326.8	\$ 218.9
Investing activities	(80.4)	(172.0)
Financing activities	(133.1)	(49.4)
Net increase (decrease) in cash and cash equivalents	<u>\$ 113.3</u>	<u>\$ (2.5)</u>

Cash Flows Provided by Operating Activities

For purposes of this cash flow discussion, we define trade working capital as accounts receivable, inventory and accounts payable. Other working capital is defined as all other current assets and liabilities except trade working capital.

Net cash flows provided by operating activities for the nine months ended September 30, 2017 were \$326.8 million. The positive cash flow from operating activities generated over this period was primarily driven by net income before noncontrolling interest of \$44.2 million, non-cash depreciation and amortization of \$159.2 million, net cash inflows for trade working capital of \$53.7 million and net cash inflows from other working capital of \$32.4 million. The cash inflow related to trade working capital consisted of a decrease in inventory of \$9.1 million, and a decrease in accounts receivable of \$8.1 million, coupled with an increase in accounts payable of \$36.5 million. The decrease in inventories was primarily due to reductions in gasoline, distillates and asphalt volumes, partially offset by higher gasoline and distillate prices, as of September 30, 2017. The increase in accounts payable was primarily attributable to increased payables for crude purchases due to increased pricing and volumes, payables associated with the current turnaround at our Wynnewood refinery and the timing of payments. The net cash inflow for other working capital was primarily attributable to prepaid expenses and other current assets of \$26.5 million, other current liabilities of \$6.5 million, and deferred revenue of \$7.4 million, partially offset by a reduction in due to parent of \$8.0 million. The decrease in prepaid expense was primarily attributable to a decrease in crude barrels in-transit coupled with a decrease in prepaid pipeline capacity. The increase in other current liabilities was primarily due to the increased derivative activity and the cash inflow related to deferred revenue was primarily due to collection of customer prepayments for deliveries scheduled during the three months ending December 31, 2017.

Net cash flows provided by operating activities for the nine months ended September 30, 2016 were \$218.9 million. The positive cash flow from operating activities generated over this period was primarily driven by current period settlements on derivative contracts of \$35.2 million, net income before noncontrolling interest of \$15.0 million, non-cash depreciation and amortization of \$140.8 million and net cash provided of \$36.0 million comprised of net cash outflows for trade working capital of \$59.1 million and cash inflows from other working capital of \$95.1 million. The net cash outflow for trade working capital was primarily attributable to an increase in accounts receivable of \$35.3 million, an increase in inventory of \$18.5 million and a decrease in accounts payable of \$42.3 million. The increase in accounts receivable was primarily due to increased pricing for both gasoline and distillates. The decrease in accounts payable was primarily attributable to the turnaround at the Coffeyville refinery which was completed during the first quarter of 2016. The increase in inventories was primarily attributable to increased pricing for both gasoline and distillates, as well as higher crude oil pricing. The net cash inflows from other working capital was primarily due to a decrease in deferred revenue of \$27.7 million, primarily associated with deferred revenue of the East Dubuque Facility, offset by an increase in other current liabilities of \$107.3 million. The increase in other current liabilities was primarily due to an increase in the Refining Partnership's biofuel blending obligation as a direct result of the increase in pricing for RINs credits under the RFS, partially offset by a reduction in personnel accruals.

Cash Flows Used in Investing Activities

Net cash used in investing activities for the nine months ended September 30, 2017 was \$80.4 million compared to \$172.0 million for the nine months ended September 30, 2016, representing a decrease of \$91.6 million. Net cash used in investing activities for the nine months ended September 30, 2017 was attributable to capital spending of \$79.9 million and \$1.4 million associated with investment in the joint venture with Velocity, VPP, by the Refining Partnership. Net cash used in investing activities for the nine months ended September 30, 2016 was attributable to capital spending of \$105.6 million, the acquisition of CVR Nitrogen in April 2016 for a net impact of approximately \$63.9 million and the purchase of available-for-sale securities of \$4.2 million in the first half of the year, offset by the net available-for-sale securities activity of \$4.9 million.

Cash Flows Used In Financing Activities

Net cash used in financing activities for the nine months ended September 30, 2017 was \$133.1 million, as compared to \$49.4 million for the nine months ended September 30, 2016. The net cash used in financing activities for the nine months ended September 30, 2017 was primarily attributable to dividend payments to common stockholders of \$130.2 million, distributions to the Nitrogen Fertilizer Partnership common unitholders of \$1.5 million and payments of capital lease obligations of \$1.4 million. The net cash used in financing activities for the nine months ended September 30, 2016 was primarily attributable to the issuance of the 2023 Notes for net proceeds of \$628.8 million, offset by the repurchase of the 2021 Notes totaling \$320.5 million, the repayment of the Nitrogen Fertilizer Partnership credit facility totaling \$125.0 million, dividend payments to common stockholders of \$130.2 million and distributions to the Nitrogen Fertilizer Partnership common unitholders of \$42.0 million.

As of and for the nine months ended September 30, 2017, there were no borrowings or repayments under the Amended and Restated ABL credit facility or the ABL Credit Facility.

Contractual Obligations

As of September 30, 2017, our contractual obligations included long-term debt, operating leases, capital lease obligations, unconditional purchase obligations, environmental liabilities and interest payments. There were no material changes outside the ordinary course of our business with respect to our contractual obligations during the nine months ended September 30, 2017 from those disclosed in our 2016 Form 10-K.

Off-Balance Sheet Arrangements

We had no off-balance sheet arrangements as of September 30, 2017, as defined within the rules and regulations of the SEC.

Recent Accounting Pronouncements

Refer to Part I, Item 1, Note 2 ("Recent Accounting Pronouncements") of this Report for a discussion of recent accounting pronouncements applicable to the Company.

Critical Accounting Policies

Our critical accounting policies are disclosed in the "Critical Accounting Policies" section of our 2016 Form 10-K. No modifications have been made to our critical accounting policies.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

The risk inherent in our market risk sensitive instruments and positions is the potential loss from adverse changes in commodity prices, RINs prices and interest rates. Except as discussed below, information about market risks for the nine months ended September 30, 2017 does not differ materially from that discussed under Part II — Item 7A of our 2016 Form 10-K.

Our earnings and cash flows and estimates of future cash flows are sensitive to changes in energy prices. The prices of crude oil and refined products have fluctuated substantially in recent years. These prices depend on many factors, including the overall demand for crude oil and refined products, which in turn depends, among other factors, on general economic conditions, the level of foreign and domestic production of crude oil and refined products, the availability of imports of crude oil and refined products, the marketing of alternative and competing fuels, the extent of government regulations and global market dynamics. The prices we receive for refined products are also affected by factors such as local market conditions and the level of operations of other refineries in our markets. The prices at which we can sell gasoline and other refined products are strongly influenced by the price of crude oil. Generally, an increase or decrease in the price of crude oil results in a corresponding increase or decrease in the price of gasoline and other refined products. The timing of the relative movement of the prices, however, can impact profit margins, which could significantly affect our earnings and cash flows.

Commodity Price Risk

At September 30, 2017, the Refining Partnership had open commodity swap instruments consisting of 6.4 million barrels of 2-1-1 crack spreads, 4.9 million barrels of distillate crack spreads and 4.9 million barrels of gasoline crack spreads. A change of \$1.00 per barrel in the fair value of the benchmark crude or product basis would result in an increase or decrease in the related fair value of commodity instruments of \$16.2 million.

Compliance Program Price Risk

As a producer of transportation fuels from petroleum, the Refining Partnership is required to blend biofuels into the products it produces or to purchase RINs in the open market in lieu of blending to meet the mandates established by the EPA. The Refining Partnership is exposed to market risk related to the volatility in the price of RINs needed to comply with the RFS. To mitigate the impact of this risk on the results of operations and cash flows, the Refining Partnership purchases RINs when prices are deemed favorable or otherwise appropriate for business purposes. See Note 12 ("Commitments and Contingencies") to Part I, Item 1 of this Report and "Major Influences on Results of Operations" in Part I, Item 2 of this Report for further discussion about compliance with the RFS.

Foreign Currency Exchange

Given that our business is currently based entirely in the United States, we are not significantly exposed to foreign currency exchange rate risk. A portion of the petroleum business' pipeline transportation costs are transacted in Canadian dollars. Commitments for future periods under this agreement reflect the exchange rate between the Canadian Dollar and the U.S. Dollar as of the end of the reporting period. Based on the short period of time between the billing and settlement of these transportation costs in Canadian dollars, the exposure to foreign currency exchange rate risk and the resulting foreign currency gain (loss) is not material.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

As of September 30, 2017, we have evaluated, under the direction of our Chief Executive Officer and Chief Financial Officer, the effectiveness of our disclosure controls and procedures, as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). There are inherent limitations to the effectiveness of any system of disclosure controls and procedures, including the possibility of human error and the circumvention or overriding of the controls and procedures. Accordingly, even effective disclosure controls and procedures can only provide reasonable assurance of achieving their control objectives. Based upon and as of the date of that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective to provide reasonable assurance that information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and our Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. It should be noted that any system of disclosure controls and procedures, however well designed and operated, can provide only reasonable, and not absolute, assurance that the objectives of the system are met. In addition, the design of any system of disclosure controls and procedures is based in part upon assumptions about the likelihood of future events. Due to these and other inherent limitations of any such system, there can be no assurance that any design will always succeed in achieving its stated goals under all potential future conditions.

Changes in Internal Control Over Financial Reporting

There has been no change in our internal control over financial reporting required by Rule 13a-15 of the Exchange Act that occurred during the fiscal quarter ended September 30, 2017 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION**Item 1. Legal Proceedings**

See Note 12 ("Commitments and Contingencies") to Part I, Item 1 of this Report, which is incorporated by reference into this Part II, Item 1, for a description of certain litigation, legal and administrative proceedings and environmental matters.

Item 1A. Risk Factors

There have been no material changes from the risk factors previously disclosed in the "Risk Factors" section in our 2016 Form 10-K.

Item 5. Other Information

The U.S. Attorney's office for the Southern District of New York recently contacted CVR Energy seeking production of information pertaining to our, CVR Refining's and Mr. Icahn's activities relating to the RFS and Mr. Icahn's role as an advisor to the President. We are cooperating with the request and are providing information in response to the subpoena. The U.S. Attorney's office has not made any claims or allegations against us or Mr. Icahn. We maintain a strong compliance program and, while no assurances can be made, we do not believe this inquiry will have a material impact on our business, financial condition, results of operations or cash flows.

Item 6. Exhibits

Exhibit Number	Exhibit Description
31.1*	Rule 13a-14(a)/15(d)-14(a) Certification of Chief Executive Officer and President.
31.2*	Rule 13a-14(a)/15(d)-14(a) Certification of Chief Financial Officer and Treasurer.
32.1†	Section 1350 Certification of Chief Executive Officer and President.
32.2†	Section 1350 Certification of Chief Financial Officer and Treasurer.
101*	The following financial information for CVR Energy, Inc.'s Quarterly Report on Form 10-Q for the quarter ended September 30, 2017 formatted in XBRL ("Extensible Business Reporting Language") includes: (i) Condensed Consolidated Balance Sheets (unaudited), (ii) Condensed Consolidated Statements of Operations (unaudited), (iii) Condensed Consolidated Statements of Comprehensive Income (unaudited), (iv) Condensed Consolidated Statement of Changes in Equity (unaudited), (v) Condensed Consolidated Statements of Cash Flows (unaudited) and (vi) the Notes to Condensed Consolidated Financial Statements (unaudited), tagged in detail.

* Filed herewith.

† Furnished herewith.

PLEASE NOTE: Pursuant to the rules and regulations of the SEC, we may file or incorporate by reference agreements as exhibits to the reports that we file with or furnish to the SEC. The agreements are filed to provide investors with information regarding their respective terms. The agreements are not intended to provide any other factual information about the Company, its business or operations. In particular, the assertions embodied in any representations, warranties and covenants contained in the agreements may be subject to qualifications with respect to knowledge and materiality different from those applicable to investors and may be qualified by information in confidential disclosure schedules not included with the exhibits. These disclosure schedules may contain information that modifies, qualifies and creates exceptions to the representations, warranties and covenants set forth in the agreements. Moreover, certain representations, warranties and covenants in the agreements may have been used for the purpose of allocating risk between the parties, rather than establishing matters as facts. In addition, information concerning the subject matter of the representations, warranties and covenants may have changed after the date of the respective agreement, which subsequent information may or may not be fully reflected in the Company's public disclosures. Accordingly, investors should not rely on the representations, warranties and covenants in the agreements as characterizations of the actual state of facts about the Company, its business or operations on the date hereof.

**Certification of Chief Executive Officer and President Pursuant to
Rule 13a-14(a) or 15d-14(a) under the Securities Exchange Act of 1934,
As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**

I, John J. Lipinski, certify that:

1. I have reviewed this report on Form 10-Q of CVR Energy, Inc.;
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 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 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.

/s/ JOHN J.
By: LIPINSKI

John J. Lipinski
Chief Executive
Officer and
President
(Principal
Executive Officer)

Date: November 3, 2017

**Certification of Chief Financial Officer and Treasurer Pursuant to
Rule 13a-14(a) or 15d-14(a) under the Securities Exchange Act of 1934,
As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**

I, Susan M. Ball, certify that:

1. I have reviewed this report on Form 10-Q of CVR Energy, Inc.;
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 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 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.

By: /s/ SUSAN M. BALL

Susan M. Ball
*Chief Financial Officer
and Treasurer
(Principal Financial
and Accounting
Officer)*

Date: November 3, 2017

**Certification of Chief Executive Officer and President
Pursuant to 18 U.S.C. Section 1350, As Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002**

In connection with the filing of the Quarterly Report of CVR Energy, Inc., a Delaware corporation (the "Company"), on Form 10-Q for the fiscal quarter ended September 30, 2017, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, John J. Lipinski, Chief Executive Officer and President of the Company, certify, pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge and belief:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company as of the dates and for the periods expressed in the Report.

By: /s/ JOHN J. LIPINSKI
John J. Lipinski
Chief Executive Officer and President
(Principal Executive Officer)

Dated: November 3, 2017

**Certification of Chief Financial Officer and Treasurer
Pursuant to 18 U.S.C. Section 1350, As Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002**

In connection with the filing of the Quarterly Report of CVR Energy, Inc., a Delaware corporation (the "Company"), on Form 10-Q for the fiscal quarter ended September 30, 2017, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Susan M. Ball, Chief Financial Officer and Treasurer of the Company, certify, pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge and belief:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company as of the dates and for the periods expressed in the Report.

By: /s/ SUSAN M. BALL

Susan M. Ball

Chief Financial Officer and Treasurer

(Principal Financial and Accounting Officer)

Dated: November 3, 2017