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, 2020
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 1-3876

HOLLYFRONTIER CORPORATION
(Exact name of registrant as specified in its charter)

Delaware	**75-1056913**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
2828 N. Harwood, Suite 1300	
Dallas	
Texas	**75201**
(Address of principal executive offices)	**(Zip Code)**

(214) 871-3555
(Registrant's telephone number, including area code)

(Former name, former address and former fiscal year, if changed since last report)

Securities registered pursuant to 12(b) of the Securities Exchange Act of 1934:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock $0.01 par value	HFC	New York Stock Exchange

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

Large accelerated filer	☒	Accelerated filer	☐	Non-accelerated filer	☐	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 in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

162,017,259 shares of Common Stock, par value $.01 per share, were outstanding on October 30, 2020.

HOLLYFRONTIER CORPORATION
INDEX

	Page
Forward-Looking Statements	3
Definitions	5
PART I. FINANCIAL INFORMATION	
Item 1. Financial Statements	
Consolidated Balance Sheets September 30, 2020 (Unaudited) and December 31, 2019	6
Consolidated Statements of Income (Unaudited) Three and Nine Months Ended September 30, 2020 and 2019	7
Consolidated Statements of Comprehensive Income (Unaudited) Three and Nine Months Ended September 30, 2020 and 2019	8
Consolidated Statements of Cash Flows (Unaudited) Nine Months Ended September 30, 2020 and 2019	9
Consolidated Statements of Equity (Unaudited) Three and Nine Months Ended September 30, 2020 and 2019	10
Notes to Consolidated Financial Statements (Unaudited)	12
Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations	36
Item 3. Quantitative and Qualitative Disclosures About Market Risk	57
Reconciliations to Amounts Reported Under Generally Accepted Accounting Principles	57
Item 4. Controls and Procedures	59
PART II. OTHER INFORMATION	
Item 1. Legal Proceedings	60
Item 1A. Risk Factors	62
Item 2. Unregistered Sales of Equity Securities and Use of Proceeds	62
Item 6. Exhibits	62
Index to Exhibits	63
Signatures	64

FORWARD-LOOKING STATEMENTS

References herein to HollyFrontier Corporation ("HollyFrontier") include HollyFrontier and its consolidated subsidiaries. In accordance with the Securities and Exchange Commission's ("SEC") "Plain English" guidelines, this Quarterly Report on Form 10-Q has been written in the first person. In this document, the words "we," "our," "ours" and "us" refer only to HollyFrontier and its consolidated subsidiaries or to HollyFrontier or an individual subsidiary and not to any other person with certain exceptions. Generally, the words "we," "our," "ours" and "us" include Holly Energy Partners, L.P. ("HEP") and its subsidiaries as consolidated subsidiaries of HollyFrontier, unless when used in disclosures of transactions or obligations between HEP and HollyFrontier or its other subsidiaries. This document contains certain disclosures of agreements that are specific to HEP and its consolidated subsidiaries and do not necessarily represent obligations of HollyFrontier. When used in descriptions of agreements and transactions, "HEP" refers to HEP and its consolidated subsidiaries.

This Quarterly Report on Form 10-Q contains certain "forward-looking statements" within the meaning of the federal securities laws. All statements, other than statements of historical fact included in this Form 10-Q, including, but not limited to, those under "Results of Operations," "Liquidity and Capital Resources" and "Risk Management" in Part I, Item 2 "Management's Discussion and Analysis of Financial Condition and Results of Operations" and those in Part II, Item 1 "Legal Proceedings" are forward-looking statements. Forward-looking statements use words such as "anticipate," "project," "expect," "plan," "goal," "forecast," "intend," "should," "would," "could," "believe," "may," and similar expressions and statements regarding our plans and objectives for future operations. These statements are based on management's beliefs and assumptions using currently available information and expectations as of the date hereof, are not guarantees of future performance and involve certain risks and uncertainties. All statements concerning our expectations for future results of operations are based on forecasts for our existing operations and do not include the potential impact of any future acquisitions. Although we believe that the expectations reflected in these forward-looking statements are reasonable, we cannot assure you that our expectations will prove to be correct. Therefore, actual outcomes and results could materially differ from what is expressed, implied or forecast in these statements. Any differences could be caused by a number of factors including, but not limited to:

- the extraordinary market environment and effects of the COVID-19 pandemic, including the continuation of a material decline in demand for refined petroleum products in markets we serve;
- risks and uncertainties with respect to the actions of actual or potential competitive suppliers and transporters of refined petroleum products or lubricant and specialty products in our markets;
- the spread between market prices for refined products and market prices for crude oil;
- the possibility of constraints on the transportation of refined products or lubricant and specialty products;
- the possibility of inefficiencies, curtailments or shutdowns in refinery operations or pipelines, whether due to infection in the workforce or in response to reductions in demand;
- effects of governmental and environmental regulations and policies, including the effects of current restrictions on various commercial and economic activities in response to the COVID-19 pandemic;
- the availability and cost of our financing;
- the effectiveness of our capital investments and marketing strategies;
- our efficiency in carrying out and consummating construction projects, including our ability to complete announced capital projects, such as the conversion of the Cheyenne Refinery to a renewable diesel facility and the construction of the Artesia renewable diesel unit and pretreatment unit, on time and within budget;
- our ability to timely obtain or maintain permits, including those necessary for operations or capital projects,
- our ability to acquire refined or lubricant product operations or pipeline and terminal operations on acceptable terms and to integrate any existing or future acquired operations;
- the possibility of terrorist or cyberattacks and the consequences of any such attacks;
- general economic conditions, including uncertainty regarding the timing, pace and extent of an economic recovery in the United States;
- further deterioration in gross margins or a prolonged economic slowdown due to the COVID-19 pandemic which could result in an impairment of goodwill and / or additional long-lived asset impairments; and
- other financial, operational and legal risks and uncertainties detailed from time to time in our SEC filings.

Cautionary statements identifying important factors that could cause actual results to differ materially from our expectations are set forth in this Form 10-Q, including without limitation the forward-looking statements that are referred to above. When considering forward-looking statements, you should keep in mind the risk factors and other cautionary statements set forth under the heading “Risk Factors” included in Item 1A in our Annual Report on Form 10-K for the year ended December 31, 2019 and our Quarterly Report on Form 10-Q for the quarter ended June 30, 2020 and in conjunction with the discussion in this Form 10-Q in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” under the headings “Outlook” and “Liquidity and Capital Resources.” All forward-looking statements included in this Form 10-Q and all subsequent written or oral forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by these cautionary statements. The forward-looking statements speak only as of the date made and, other than as required by law, we undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

DEFINITIONS

Within this report, the following terms have these specific meanings:

"**BPD**" means the number of barrels per calendar day of crude oil or petroleum products.

"**BPSD**" means the number of barrels per stream day (barrels of capacity in a 24 hour period) of crude oil or petroleum products.

"**Base oil**" is a lubricant grade oil initially produced from refining crude oil or through chemical synthesis that is used in producing lubricant products such as lubricating greases, motor oil and metal processing fluids.

"**Black wax crude oil**" is a low sulfur, low gravity crude oil produced in the Uintah Basin in Eastern Utah that has certain characteristics that require specific facilities to transport, store and refine into transportation fuels.

"**Cracking**" means the process of breaking down larger, heavier and more complex hydrocarbon molecules into simpler and lighter molecules.

"**Crude oil distillation**" means the process of distilling vapor from liquid crudes, usually by heating, and condensing the vapor slightly above atmospheric pressure turning it back to liquid in order to purify, fractionate or form the desired products.

"**FCC**," or fluid catalytic cracking, means a refinery process that breaks down large complex hydrocarbon molecules into smaller more useful ones using a circulating bed of catalyst at relatively high temperatures.

"**LPG**" means liquid petroleum gases.

"**Lubricant**" or "**lube**" means a solvent neutral paraffinic product used in commercial heavy duty engine oils, passenger car oils and specialty products for industrial applications such as heat transfer, metalworking, rubber and other general process oil.

"**MMBTU**" means one million British thermal units.

"**Rack back**" represents the portion of our Lubricants and Specialty Products business operations that entails the processing of feedstocks into base oils.

"**Rack forward**" represents the portion of our Lubricants and Specialty Products business operations that entails the processing of base oils into finished lubricants and the packaging, distribution and sale to customers.

"**Refinery gross margin**" means the difference between average net sales price and average cost per barrel sold. This does not include the associated depreciation and amortization costs.

"**Renewable diesel**" means a fuel derived from vegetable oils or animal fats that is produced through various processes, most commonly through hydrotreating, reacting the feedstock with hydrogen under temperatures and pressure in the presence of a catalyst.

"RINs" means renewable identification numbers and refers to serial numbers assigned to credits generated from renewable fuel production under the Environmental Protection Agency's Renewable Fuel Standard ("RFS") regulations, which require blending renewable fuels into the nation's fuel supply. In lieu of blending, refiners may purchase these transferable credits in order to comply with the regulations.

"**Sour crude oil**" means crude oil containing quantities of sulfur greater than 0.4 percent by weight, while "**sweet crude oil**" means crude oil containing quantities of sulfur equal to or less than 0.4 percent by weight.

"**Vacuum distillation**" means the process of distilling vapor from liquid crudes, usually by heating, and condensing the vapor below atmospheric pressure turning it back to a liquid in order to purify, fractionate or form the desired products.

"White oil" is an extremely pure, highly-refined petroleum product that has a wide variety of applications ranging from pharmaceutical to cosmetic products.

"WTI" means West Texas Intermediate and is a grade of crude oil used as a common benchmark in oil pricing. WTI is a sweet crude oil and has a relatively low density.

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

HOLLYFRONTIER CORPORATION
CONSOLIDATED BALANCE SHEETS
(In thousands, except share data)

	September 30, 2020	December 31, 2019
	(Unaudited)	
ASSETS		
Current assets:		
Cash and cash equivalents *(HEP:$18,091 and $13,287, respectively)*	$ 1,524,888	$ 885,162
Accounts receivable: Product and transportation *(HEP: $13,856 and $18,732, respectively)*	525,247	834,771
Crude oil resales	26,667	44,914
	551,914	879,685
Inventories: Crude oil and refined products	933,683	1,282,789
Materials, supplies and other *(HEP: $828 and $833, respectively)*	203,981	191,413
	1,137,664	1,474,202
Income taxes receivable	70,008	5,478
Prepayments and other *(HEP: $5,454 and $6,795, respectively)*	34,354	61,662
Total current assets	3,318,828	3,306,189
Properties, plants and equipment, at cost *(HEP: $2,067,282 and $2,047,674, respectively)*	7,173,262	7,237,297
Less accumulated depreciation *(HEP: $(608,520) and $(552,786), respectively)*	(2,645,390)	(2,414,585)
	4,527,872	4,822,712
Operating lease right-of-use assets *(HEP: $3,164 and $2,652, respectively)*	365,045	467,109
Other assets: Turnaround costs	349,185	521,278
Goodwill *(HEP: $312,873 and $312,873, respectively)*	2,374,930	2,373,907
Intangibles and other *(HEP: $351,225 and $319,569, respectively)*	643,881	673,646
	3,367,996	3,568,831
Total assets	$ 11,579,741	$ 12,164,841
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable *(HEP: $21,221 and $18,050, respectively)*	$ 825,021	$ 1,215,555
Income taxes payable	6,698	27,965
Operating lease liabilities *(HEP: $3,787 and $3,608, respectively)*	98,790	104,415
Accrued liabilities *(HEP: $28,372 and $30,418, respectively)*	306,341	337,993
Total current liabilities	1,236,850	1,685,928
Long-term debt *(HEP: $1,439,874 and $1,462,031, respectively)*	3,176,349	2,455,640
Noncurrent operating lease liabilities *(HEP: $68,681 and $72,000, respectively)*	300,468	364,420
Deferred income taxes *(HEP: $432 and $424, respectively)*	728,899	889,270
Other long-term liabilities *(HEP: $57,638 and $59,021, respectively)*	260,606	260,157
Equity:		
HollyFrontier stockholders' equity:		
Preferred stock, $1.00 par value – 5,000,000 shares authorized; none issued	—	—
Common stock $.01 par value – 320,000,000 shares authorized; 256,042,554 shares issued as of September 30, 2020 and December 31, 2019	2,560	2,560
Additional capital	4,217,128	4,204,547
Retained earnings	4,088,816	4,744,120
Accumulated other comprehensive income	10,102	14,774
Common stock held in treasury, at cost – 94,026,587 and 94,196,029 shares as of September 30, 2020 and December 31, 2019, respectively	(2,982,463)	(2,987,808)
Total HollyFrontier stockholders' equity	5,336,143	5,978,193
Noncontrolling interest	540,426	531,233
Total equity	5,876,569	6,509,426
Total liabilities and equity	$ 11,579,741	$ 12,164,841

Parenthetical amounts represent asset and liability balances attributable to Holly Energy Partners, L.P. ("HEP") as of September 30, 2020 and December 31, 2019. HEP is a variable interest entity.

See accompanying notes.

HOLLYFRONTIER CORPORATION
CONSOLIDATED STATEMENTS OF INCOME
(Unaudited)
(In thousands, except per share data)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Sales and other revenues	$ 2,819,400	$ 4,424,828	$ 8,282,875	$ 13,104,690
Operating costs and expenses:				
Cost of products sold (exclusive of depreciation and amortization):				
Cost of products sold (exclusive of lower of cost or market inventory valuation adjustment)	2,377,238	3,403,767	6,647,960	10,307,856
Lower of cost or market inventory valuation adjustment	(62,849)	34,062	227,711	(150,483)
	2,314,389	3,437,829	6,875,671	10,157,373
Operating expenses (exclusive of depreciation and amortization)	332,496	345,578	964,200	1,010,422
Selling, general and administrative expenses (exclusive of depreciation and amortization)	74,453	87,626	237,559	260,977
Depreciation and amortization	125,280	127,016	396,033	375,345
Long-lived asset and goodwill impairments	—	—	436,908	152,712
Total operating costs and expenses	2,846,618	3,998,049	8,910,371	11,956,829
Income (loss) from operations	(27,218)	426,779	(627,496)	1,147,861
Other income (expense):				
Earnings of equity method investments	1,316	1,334	5,186	5,217
Interest income	1,011	6,164	6,590	17,127
Interest expense	(30,589)	(36,027)	(85,923)	(106,938)
Gain on business interruption insurance settlement	81,000	—	81,000	—
Gain on sales-type leases	—	—	33,834	—
Loss on early extinguishment of debt	—	—	(25,915)	—
Gain (loss) on foreign currency transactions	1,030	395	(918)	4,873
Other, net	1,368	2,356	4,790	3,005
	55,136	(25,778)	18,644	(76,716)
Income (loss) before income taxes	27,918	401,001	(608,852)	1,071,145
Income tax expense (benefit):				
Current	35,826	58,255	(41,221)	176,903
Deferred	(31,253)	44,766	(147,283)	102,959
	4,573	103,021	(188,504)	279,862
Net income (loss)	23,345	297,980	(420,348)	791,283
Less net income attributable to noncontrolling interest	25,746	36,167	63,353	79,500
Net income (loss) attributable to HollyFrontier stockholders	$ (2,401)	$ 261,813	$ (483,701)	$ 711,783
Earnings (loss) per share attributable to HollyFrontier stockholders:				
Basic	$ (0.01)	$ 1.60	$ (2.99)	$ 4.23
Diluted	$ (0.01)	$ 1.58	$ (2.99)	$ 4.20
Average number of common shares outstanding:				
Basic	162,015	163,676	161,927	167,935
Diluted	162,015	165,011	161,927	169,125

See accompanying notes.

HOLLYFRONTIER CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Unaudited)
(In thousands)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Net income (loss)	$ 23,345	$ 297,980	$ (420,348)	$ 791,283
Other comprehensive income (loss):				
Foreign currency translation adjustment	7,727	(9,311)	(2,149)	4,212
Hedging instruments:				
Change in fair value of cash flow hedging instruments	(2,094)	(1,989)	(7,329)	12,909
Reclassification adjustments to net income (loss) on settlement of cash flow hedging instruments	4,586	(5,573)	3,411	(12,537)
Net unrealized gain (loss) on hedging instruments	2,492	(7,562)	(3,918)	372
Pension and other post-retirement benefit obligations:				
Actuarial loss on pension plans	—	—	(45)	—
Actuarial gain on post-retirement healthcare plans	—	—	3	—
Net change in pension and other post-retirement benefit obligations	—	—	(42)	—
Other comprehensive income (loss) before income taxes	10,219	(16,873)	(6,109)	4,584
Income tax expense (benefit)	2,342	(3,888)	(1,437)	990
Other comprehensive income (loss)	7,877	(12,985)	(4,672)	3,594
Total comprehensive income (loss)	31,222	284,995	(425,020)	794,877
Less noncontrolling interest in comprehensive income	25,746	36,167	63,353	79,500
Comprehensive income (loss) attributable to HollyFrontier stockholders	$ 5,476	$ 248,828	$ (488,373)	$ 715,377

See accompanying notes.

HOLLYFRONTIER CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)
(In thousands)

	Nine Months Ended September 30,	
	2020	**2019**
Cash flows from operating activities:		
Net income (loss)	$ (420,348)	$ 791,283
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	396,033	375,345
Long-lived asset and goodwill impairments	436,908	152,712
Lower of cost or market inventory valuation adjustment	227,711	(150,483)
Earnings of equity method investments, inclusive of distributions	(238)	280
Loss on early extinguishment of debt	25,915	—
Gain on sales-type leases	(33,834)	—
(Gain) loss on sale of assets	(257)	202
Deferred income taxes	(147,283)	102,959
Equity-based compensation expense	22,221	30,635
Change in fair value – derivative instruments	(3,727)	19,880
(Increase) decrease in current assets:		
Accounts receivable	325,796	(116,793)
Inventories	104,640	(47,409)
Income taxes receivable	(64,162)	13,704
Prepayments and other	14,403	17,710
Increase (decrease) in current liabilities:		
Accounts payable	(387,259)	321,537
Income taxes payable	(21,379)	808
Accrued liabilities	(22,037)	54,779
Turnaround expenditures	(73,822)	(152,431)
Other, net	11,769	(3,314)
Net cash provided by operating activities	391,050	1,411,404
Cash flows from investing activities:		
Additions to properties, plants and equipment	(174,366)	(171,229)
Additions to properties, plants and equipment – HEP	(38,642)	(23,828)
Purchase of Sonneborn, net of cash acquired	—	(662,665)
Investment in equity company - HEP	(2,438)	—
Other, net	1,795	958
Net cash used for investing activities	(213,651)	(856,764)
Cash flows from financing activities:		
Borrowings under credit agreements	219,500	269,500
Repayments under credit agreements	(237,000)	(257,000)
Proceeds from issuance of senior notes - HFC	748,925	—
Proceeds from issuance of senior notes - HEP	500,000	—
Redemption of senior notes - HEP	(522,500)	—
Purchase of treasury stock	(3,350)	(471,976)
Dividends	(171,603)	(168,008)
Distributions to noncontrolling interests	(70,941)	(100,095)
Contributions from noncontrolling interests	15,382	—
Payments on finance leases	(2,149)	(1,158)
Deferred financing costs	(13,511)	—
Other, net	454	(600)
Net cash provided by (used for) financing activities	463,207	(729,337)
Effect of exchange rate on cash flow	(880)	1,801
Cash and cash equivalents:		
Increase (decrease) for the period	639,726	(172,896)
Beginning of period	885,162	1,154,752
End of period	$ 1,524,888	$ 981,856
Supplemental disclosure of cash flow information:		
Cash paid during the period for:		
Interest	$ (83,325)	$ (93,929)
Income taxes, net	$ (52,270)	$ (163,232)

See accompanying notes.

HOLLYFRONTIER CORPORATION
CONSOLIDATED STATEMENTS OF EQUITY
(Unaudited)
(In thousands except per share data)

	HollyFrontier Stockholders' Equity						
	Common Stock	Additional Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock	Non-controlling Interest	Total Equity
Balance at December 31, 2019	$ 2,560	$ 4,204,547	$ 4,744,120	$ 14,774	$ (2,987,808)	$ 531,233	$ 6,509,426
Net income (loss)	—	—	(304,623)	—	—	11,337	(293,286)
Dividends ($0.35 declared per common share)	—	—	(57,248)	—	—	—	(57,248)
Distributions to noncontrolling interest holders	—	—	—	—	—	(33,918)	(33,918)
Other comprehensive loss, net of tax	—	—	—	(26,923)	—	—	(26,923)
Issuance of common stock under incentive compensation plans, net of forfeitures	—	(2,037)	—	—	2,037	—	—
Equity-based compensation	—	5,824	—	—	—	506	6,330
Purchase of treasury stock	—	—	—	—	(1,062)	—	(1,062)
Purchase of HEP units for restricted grants	—	—	—	—	—	(145)	(145)
Contributions from noncontrolling interests	—	—	—	—	—	7,304	7,304
Balance at March 31, 2020	$ 2,560	$ 4,208,334	$ 4,382,249	$ (12,149)	$ (2,986,833)	$ 516,317	$ 6,110,478
Net income (loss)	—	—	(176,677)	—	—	26,270	(150,407)
Dividends ($0.35 declared per common share)	—	—	(57,182)	—	—	—	(57,182)
Distributions to noncontrolling interest holders	—	—	—	—	—	(17,090)	(17,090)
Other comprehensive income, net of tax	—	—	—	14,374	—	—	14,374
Issuance of common stock under incentive compensation plans, net of forfeitures	—	(527)	—	—	527	—	—
Equity-based compensation	—	7,484	—	—	—	475	7,959
Purchase of treasury stock	—	—	—	—	(181)	—	(181)
Purchase of HEP units for restricted grants	—	—	—	—	—	(2)	(2)
Contributions from noncontrolling interests	—	—	—	—	—	5,959	5,959
Reclamation of stockholder short-swing profit	—	603	—	—	—	—	603
Balance at June 30, 2020	$ 2,560	$ 4,215,894	$ 4,148,390	$ 2,225	$ (2,986,487)	$ 531,929	$ 5,914,511
Net income	—	—	(2,401)	—	—	25,746	23,345
Dividends ($0.35 declared per common share)	—	—	(57,173)	—	—	—	(57,173)
Distributions to noncontrolling interest holders	—	—	—	—	—	(19,933)	(19,933)
Other comprehensive loss, net of tax	—	—	—	7,877	—	—	7,877
Issuance of common stock under incentive compensation plans, net of tax	—	(6,131)	—	—	6,131	—	—
Equity-based compensation	—	7,365	—	—	—	567	7,932
Purchase of treasury stock	—	—	—	—	(2,107)	—	(2,107)
Purchase of HEP units for restricted grants	—	—	—	—	—	(2)	(2)
Contributions from noncontrolling interests	—	—	—	—	—	2,119	2,119
Balance at September 30, 2020	$ 2,560	$ 4,217,128	$ 4,088,816	$ 10,102	$ (2,982,463)	$ 540,426	$ 5,876,569

	HollyFrontier Stockholders' Equity						
	Common Stock	Additional Capital	Retained Earnings	Accumulated Other Comprehensive Income	Treasury Stock	Non-controlling Interest	Total Equity
Balance at December 31, 2018	$ 2,560	$ 4,196,125	$ 4,196,902	$ 13,623	$ (2,490,639)	$ 540,488	$ 6,459,059
Net income	—	—	253,055	—	—	23,431	276,486
Dividends ($0.33 declared per common share)	—	—	(56,849)	—	—	—	(56,849)
Distributions to noncontrolling interest holders	—	—	—	—	—	(33,673)	(33,673)
Other comprehensive income, net of tax	—	—	—	13,775	—	—	13,775
Issuance of common stock under incentive compensation plans, net of forfeitures	—	3	—	—	(3)	—	—
Equity-based compensation	—	8,713	—	—	—	661	9,374
Purchase of treasury stock	—	—	—	—	(73,225)	—	(73,225)
Purchase of HEP units for restricted grants	—	—	—	—	—	(373)	(373)
Balance at March 31, 2019	$ 2,560	$ 4,204,841	$ 4,393,108	$ 27,398	$ (2,563,867)	$ 530,534	$ 6,594,574
Net income	—	—	196,915	—	—	19,902	216,817
Dividends ($0.33 declared per common share)	—	—	(56,659)	—	—	—	(56,659)
Distributions to noncontrolling interest holders	—	—	—	—	—	(33,030)	(33,030)
Other comprehensive income, net of tax	—	—	—	2,804	—	—	2,804
Equity attributable to HEP common unit issuances, net of tax	—	—	—	—	—	(140)	(140)
Issuance of common stock under incentive compensation plans, net of forfeitures	—	(138)	—	—	138	—	—
Equity-based compensation	—	11,602	—	—	—	586	12,188
Purchase of treasury stock	—	—	—	—	(205,555)	—	(205,555)
Balance at June 30, 2019	$ 2,560	$ 4,216,305	$ 4,533,364	$ 30,202	$ (2,769,284)	$ 517,852	$ 6,530,999
Net income	—	—	261,813	—	—	36,167	297,980
Dividends ($0.33 declared per common share)	—	—	(54,500)	—	—	—	(54,500)
Distributions to noncontrolling interest holders	—	—	—	—	—	(33,392)	(33,392)
Other comprehensive loss, net of tax	—	—	—	(12,985)	—	—	(12,985)
Issuance of common stock under incentive compensation plans, net of tax	—	(80)	—	—	80	—	—
Equity-based compensation	—	8,545	—	—	—	528	9,073
Purchase of treasury stock	—	—	—	—	(195,812)	—	(195,812)
Balance at September 30, 2019	$ 2,560	$ 4,224,770	$ 4,740,677	$ 17,217	$ (2,965,016)	$ 521,155	$ 6,541,363

See accompanying notes.

HOLLYFRONTIER CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

NOTE 1: Description of Business and Presentation of Financial Statements

References herein to HollyFrontier Corporation ("HollyFrontier") include HollyFrontier and its consolidated subsidiaries. In accordance with the Securities and Exchange Commission's ("SEC") "Plain English" guidelines, this Quarterly Report on Form 10-Q has been written in the first person. In these financial statements, the words "we," "our," "ours" and "us" refer only to HollyFrontier and its consolidated subsidiaries or to HollyFrontier or an individual subsidiary and not to any other person, with certain exceptions. Generally, the words "we," "our," "ours" and "us" include Holly Energy Partners, L.P. ("HEP") and its subsidiaries as consolidated subsidiaries of HollyFrontier, unless when used in disclosures of transactions or obligations between HEP and HollyFrontier or its other subsidiaries. These financial statements contain certain disclosures of agreements that are specific to HEP and its consolidated subsidiaries and do not necessarily represent obligations of HollyFrontier. When used in descriptions of agreements and transactions, "HEP" refers to HEP and its consolidated subsidiaries.

We are an independent petroleum refiner and marketer that produces high-value light products such as gasoline, diesel fuel, jet fuel and other specialty products. We own and operate petroleum refineries that serve markets throughout the Mid-Continent, Southwest and Rocky Mountain regions of the United States. In addition, we produce base oils and other specialized lubricants in the United States, Canada and the Netherlands, with retail and wholesale marketing of our products through a global sales network with locations in Canada, the United States, Europe, China and Latin America.

As of September 30, 2020, we:

- owned and operated a petroleum refinery in El Dorado, Kansas (the "El Dorado Refinery"), two refinery facilities located in Tulsa, Oklahoma (collectively, the "Tulsa Refineries"), a refinery in Artesia, New Mexico that is operated in conjunction with crude oil distillation and vacuum distillation and other facilities situated 65 miles away in Lovington, New Mexico (collectively, the "Navajo Refinery") and a refinery in Woods Cross, Utah (the "Woods Cross Refinery");
- owned a facility in Cheyenne, Wyoming, which operated as a petroleum refinery until early August 2020 (the "Cheyenne Refinery");
- owned and operated Petro-Canada Lubricants Inc. ("PCLI") located in Mississauga, Ontario, which produces base oils and other specialized lubricant products;
- owned and operated Sonneborn (as defined below) with manufacturing facilities in Petrolia, Pennsylvania and the Netherlands, which produce specialty lubricant products, such as white oils, petrolatums and waxes;
- owned and operated Red Giant Oil Company LLC ("Red Giant Oil"), which supplies locomotive engine oil and has storage and distribution facilities in Iowa, Kansas, Utah and Wyoming, along with a blending and packaging facility in Texas;
- owned and operated HollyFrontier Asphalt Company LLC ("HFC Asphalt"), which operates various asphalt terminals in Arizona, New Mexico and Oklahoma; and
- owned a 57% limited partner interest and a non-economic general partner interest in HEP, a variable interest entity ("VIE"). HEP owns and operates logistic assets consisting of petroleum product and crude oil pipelines, terminals, tankage, loading rack facilities and refinery processing units that principally support our refining and marketing operations in the Mid-Continent, Southwest and Rocky Mountain regions of the United States.

In the third quarter of 2020, we permanently ceased petroleum refining operations at our Cheyenne Refinery and subsequently began converting certain assets at our Cheyenne Refinery to renewable diesel production. This decision was primarily based on a positive outlook in the market for renewable diesel and the expectation that future free cash flow generation at our Cheyenne Refinery would be challenged due to lower gross margins resulting from the economic impact of the COVID-19 pandemic and compressed crude differentials due to dislocations in the crude oil market. Additional factors included uncompetitive operating and maintenance costs forecasted for our Cheyenne Refinery and the anticipated loss of the Environmental Protection Agency's ("EPA") small refinery exemption.

During the second quarter of 2020, we recorded a long-lived asset impairment of $232.2 million related to our Cheyenne Refinery asset group. In connection with the cessation of petroleum refining operations at our Cheyenne Refinery, we recognized $12.3 million in decommissioning expense during the third quarter of 2020. In addition, during the three and nine months ended September 30, 2020, we recorded $2.4 million and $3.5 million, respectively, in employee severance costs related to the conversion of our Cheyenne Refinery to renewable diesel production. These decommissioning and severance costs were recognized in operating expenses and were reported in our Refining segment.

During the second quarter of 2020, we also initiated and completed a corporate restructuring. As a result of this restructuring, we recorded $3.7 million in employee severance costs, which were recognized primarily as operating expenses in our Refining segment and selling, general and administrative expenses in our Corporate and Other segment.

On November 12, 2018, we entered into an equity purchase agreement to acquire 100% of the issued and outstanding capital stock of Sonneborn US Holdings Inc. and 100% of the membership rights in Sonneborn Coöperatief U.A. (collectively, “Sonneborn”). The acquisition closed on February 1, 2019. Aggregate consideration totaled $701.6 million and consisted of $662.7 million in cash paid at acquisition, net of cash acquired. Sonneborn is a producer of specialty hydrocarbon chemicals such as white oils, petrolatums and waxes with manufacturing facilities in the United States and Europe. This transaction was accounted for as a business combination using the acquisition method of accounting, with the purchase price allocated to the fair value of the acquired Sonneborn assets and liabilities as of the February 1, 2019 acquisition date, with the excess purchase price recorded as goodwill assigned to our Lubricants and Specialty Products segment. This goodwill is not deductible for income tax purposes. Fair values are as follows: cash and cash equivalents $38.9 million, current assets $139.4 million, properties, plants and equipment $168.2 million, goodwill $282.3 million, intangibles and other noncurrent assets $231.5 million, current liabilities $47.9 million and deferred income tax and other long-term liabilities $110.8 million. We incurred $0.1 million and $3.9 million for the three months ended September 30, 2020 and 2019, respectively, and $2.0 million and $20.1 million for the nine months ended September 30, 2020 and 2019, respectively, in incremental direct integration and regulatory costs that principally relate to legal, advisory and other professional fees and are presented as selling, general and administrative expenses.

We have prepared these consolidated financial statements without audit. In management’s opinion, these consolidated financial statements include all normal recurring adjustments necessary for a fair presentation of our consolidated financial position as of September 30, 2020, the consolidated results of operations, comprehensive income and statements of equity for the three and nine months ended September 30, 2020 and 2019 and consolidated cash flows for the nine months ended September 30, 2020 and 2019 in accordance with the rules and regulations of the SEC. Although certain notes and other information required by generally accepted accounting principles in the United States (“GAAP”) have been condensed or omitted, we believe that the disclosures in these consolidated financial statements are adequate to make the information presented not misleading. These consolidated financial statements should be read in conjunction with our Annual Report on Form 10-K for the year ended December 31, 2019 that has been filed with the SEC.

Our results of operations for the nine months ended September 30, 2020 are not necessarily indicative of the results of operations to be realized for the year ending December 31, 2020.

Accounts Receivable: Our accounts receivable consist of amounts due from customers that are primarily companies in the petroleum industry. Credit is extended based on our evaluation of the customer’s financial condition, and in certain circumstances collateral, such as letters of credit or guarantees, is required. We reserve for doubtful accounts based on our historical loss experience as well as expected credit losses from current economic conditions and management’s expectations of future economic conditions. Credit losses are charged to the allowance for doubtful accounts when an account is deemed uncollectible. Our allowance for doubtful accounts was $3.1 million at September 30, 2020 and $4.5 million at December 31, 2019.

Inventories: Inventories related to our refining operations are stated at the lower of cost, using the last-in, first-out (“LIFO”) method for crude oil and unfinished and finished refined products, or market. In periods of rapidly declining prices, LIFO inventories may have to be written down to market value due to the higher costs assigned to LIFO layers in prior periods. In addition, the use of the LIFO inventory method may result in increases or decreases to cost of sales in years that inventory volumes decline as the result of charging cost of sales with LIFO inventory costs generated in prior periods. An actual valuation of inventory under the LIFO method is made at the end of each year based on the inventory levels at that time. Accordingly, interim LIFO calculations are based on management’s estimates of expected year-end inventory levels and are subject to the final year-end LIFO inventory valuation.

Inventories of our Petro-Canada Lubricants and Sonneborn businesses are stated at the lower of cost, using the first-in, first-out (“FIFO”) method, or net realizable value.

Inventories consisting of process chemicals, materials and maintenance supplies and renewable identification numbers ("RINs") are stated at the lower of weighted-average cost or net realizable value.

Leases: At inception, we determine if an arrangement is or contains a lease. Right-of-use ("ROU") assets represent our right to use an underlying asset for the lease term and lease liabilities represent our payment obligation under the leasing arrangement. ROU assets and lease liabilities are recognized at the commencement date based on the present value of lease payments over the lease term. We use our estimated incremental borrowing rate ("IBR") to determine the present value of lease payments as most of our leases do not contain an implicit rate. Our IBR represents the interest rate which we would pay to borrow, on a collateralized basis, an amount equal to the lease payments over a similar term in a similar economic environment. We use the implicit rate when readily determinable.

Operating leases are recorded in operating lease right-of-use assets and current and noncurrent operating lease liabilities on our consolidated balance sheet. Finance leases are included in properties, plants and equipment and accrued liabilities and other long-term liabilities on our consolidated balance sheet.

Our lease term includes an option to extend the lease when it is reasonably certain that we will exercise that option. Leases with a term of 12 months or less are not recorded on our balance sheet. For certain equipment leases, we apply a portfolio approach for the operating lease ROU assets and liabilities. Also, as a lessee, we separate non-lease components that are identifiable and exclude them from the determination of net present value of lease payment obligations. In addition, HEP, as a lessor, does not separate the non-lease (service) component in contracts in which the lease component is the dominant component. HEP treats these combined components as an operating lease.

Goodwill and Long-lived Assets: As of September 30, 2020, our goodwill balance was $2.4 billion, with goodwill assigned to our Refining, Lubricants and Specialty Products and HEP segments of $1,733.5 million, $328.6 million and $312.9 million, respectively. See Note 15 for additional information on our segments. The carrying amount of our goodwill may fluctuate from period to period due to the effects of foreign currency translation adjustments on goodwill assigned to our Lubricants and Specialty Products segment. Goodwill represents the excess of the cost of an acquired entity over the fair value of the assets acquired and liabilities assumed. Goodwill is not subject to amortization and is tested annually or more frequently if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. Our goodwill impairment testing first entails either a quantitative assessment or an optional qualitative assessment to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If we determine that based on the qualitative factors that it is more likely than not that the fair value of the reporting unit is greater than its carrying amount, a quantitative test is performed in which we estimate the fair value of the related reporting unit. If the carrying amount of a reporting unit exceeds its fair value, the goodwill of that reporting unit is impaired, and we measure goodwill impairment as the excess of the carrying amount of the reporting unit over the related fair value.

For purposes of long-lived asset impairment evaluation, we have grouped our long-lived assets as follows: (i) our refinery asset groups, which include certain HEP logistics assets, (ii) our Lubricants and Specialty Products asset groups and (iii) our HEP asset groups, which comprises HEP assets not included in our refinery asset groups. These asset groups represent the lowest level for which independent cash flows can be identified. Our long-lived assets are evaluated for impairment by identifying whether indicators of impairment exist and if so, assessing whether the long-lived assets are recoverable from estimated future undiscounted cash flows. The actual amount of impairment loss measured, if any, is equal to the amount by which the asset group's carrying value exceeds its fair value.

Long-lived asset impairment testing
Due to the economic slowdown caused by the COVID-19 pandemic, in the second quarter of 2020 we determined that indicators of potential long-lived asset impairments were present. As a result of our long-lived asset impairment testing, we determined that the carrying value of the long-lived assets of our Cheyenne Refinery and PCLI asset groups were not recoverable, and thus recorded long-lived asset impairment charges of $232.2 million and $204.7 million, respectively, in the second quarter of 2020. Our testing did not result in any other impairments of long-lived assets in the second quarter. There were no additional indicators of long-lived asset impairment present in the third quarter of 2020.

The estimated fair values of the Cheyenne Refinery and PCLI asset groups were determined using a combination of the income and cost approaches. The income approach was based on management's best estimates of the expected future cash flows over the remaining useful life of the asset group. The cost approach utilized assumptions for the current replacement costs of similar assets adjusted for estimated depreciation and economic obsolescence. These fair value measurements involve significant unobservable inputs (Level 3 inputs). See Note 4 for further discussion of Level 3 inputs.

Goodwill impairment testing
Due to the economic slowdown caused by the COVID-19 pandemic and a decrease in our market capitalization, we determined that indicators of potential goodwill impairment for our Refining and Lubricants and Specialty Products reporting units were present in the second quarter of 2020. As such, we performed an interim test for goodwill impairment as of May 31, 2020. Our interim goodwill impairment testing indicated that there was no impairment of goodwill at our Refining and Lubricants and Specialty Products reporting units as of May 31, 2020.

We performed our annual goodwill impairment testing quantitatively as of July 1, 2020 and determined there was no impairment of goodwill attributable to our reporting units. The excess of the fair values of the reporting units over their respective carrying values ranged from 10% to 229%.
The estimated fair values of our reporting units were derived using a combination of income and market approaches. The income approach reflects expected future cash flows based on estimated forecasted production levels, selling prices, gross margins, operating costs and capital expenditures. Our market approaches include both the guideline public company and guideline transaction methods. Both methods utilize pricing multiples derived from historical market transactions of other like-kind assets. These fair value measurements involve significant unobservable inputs (Level 3 inputs). See Note 4 for further discussion of Level 3 inputs.

During the second quarter of 2019, we recorded a goodwill impairment charge of $152.7 million to fully impair the goodwill of the PCLI reporting unit included in our Lubricants and Specialty Products segment.

A reasonable expectation exists that further deterioration in our operating results or overall economic conditions could result in an impairment of goodwill and / or additional long-lived assets impairments at some point in the future. Future impairment charges could be material to our results of operations and financial condition.

Revenue Recognition: Revenue on refined product and excess crude oil sales are recognized when delivered (via pipeline, in-tank or rack) and the customer obtains control of such inventory, which is typically when title passes and the customer is billed. All revenues are reported inclusive of shipping and handling costs billed and exclusive of any taxes billed to customers. Shipping and handling costs incurred are reported as cost of products sold.

Our lubricants and specialty products business has sales agreements with marketers and distributors that provide certain rights of return or provisions for the repurchase of products previously sold to them. Under these agreements, revenues and cost of revenues are deferred until the products have been sold to end customers. Our lubricants and specialty products business also has agreements that create an obligation to deliver products at a future date for which consideration has already been received and recorded as deferred revenue. This revenue is recognized when the products are delivered to the customer.

HEP recognizes revenues as products are shipped through its pipelines and terminals and as other services are rendered. Additionally, HEP has certain throughput agreements that specify minimum volume requirements, whereby HEP bills a customer for a minimum level of shipments in the event a customer ships below their contractual requirements. If there are no future performance obligations, HEP recognizes these deficiency payments as revenue. In certain of these throughput agreements, a customer may later utilize such shortfall billings as credit towards future volume shipments in excess of its minimum levels within its respective contractual shortfall make-up period. Such amounts represent an obligation to perform future services, which may be initially deferred and later recognized as revenue based on estimated future shipping levels, including the likelihood of a customer's ability to utilize such amounts prior to the end of the contractual shortfall make-up period. HEP recognizes the service portion of these deficiency payments as revenue when HEP does not expect it will be required to satisfy these performance obligations in the future based on the pattern of rights exercised by the customer. Payment terms under our contracts with customers are consistent with industry norms and are typically payable within 30 days of the date of invoice.

Foreign Currency Translation: Assets and liabilities recorded in foreign currencies are translated into U.S. dollars using exchange rates in effect as of the balance sheet date. Revenue and expense accounts are translated using the weighted-average exchange rates during the period presented. Foreign currency translation adjustments are recorded as a component of accumulated other comprehensive income.

In connection with our PCLI acquisition, we issued intercompany notes to initially fund certain of our foreign businesses. Remeasurement adjustments resulting from the conversion of such intercompany financing amounts to functional currencies are recorded as gains and losses as a component of other income (expense) in the income statement. Such adjustments are not recorded to the Lubricants and Specialty Products segment operations, but to Corporate and Other. See Note 15 for additional information on our segments.

Income Taxes: Provisions for income taxes include deferred taxes resulting from temporary differences in income for financial and tax purposes, using the liability method of accounting for income taxes. The liability method requires the effect of tax rate changes on deferred income taxes to be reflected in the period in which the rate change was enacted. The liability method also requires that deferred tax assets be reduced by a valuation allowance unless it is more likely than not that the assets will be realized.

Potential interest and penalties related to income tax matters are recognized in income tax expense. We believe we have appropriate support for the income tax positions taken and to be taken on our income tax returns and that our accruals for tax liabilities are adequate for all open years based on an assessment of many factors, including past experience and interpretations of tax law applied to the facts of each matter.

For the nine months ended September 30, 2020, we recorded an income tax benefit of $188.5 million compared to income tax expense of $279.9 million for the nine months ended September 30, 2019. This decrease was due principally to a pre-tax loss during the nine months ended September 30, 2020 compared to pre-tax earnings in the same period of 2019. Our effective tax rates were 31.0% and 26.1% for the nine months ended September 30, 2020 and 2019, respectively. The year-over-year increase in the effective tax rate is due principally to the relationship between the pre-tax results and the earnings attributable to the noncontrolling interest that is not included in income for tax purposes.

Inventory Repurchase Obligations: We periodically enter into same-party sell / buy transactions, whereby we sell certain refined product inventory and subsequently repurchase the inventory in order to facilitate delivery to certain locations. Such sell / buy transactions are accounted for as inventory repurchase obligations under which proceeds received under the initial sell is recognized as an inventory repurchase obligation that is subsequently reversed when the inventory is repurchased. For the nine months ended September 30, 2020 and 2019, we received proceeds of $32.7 million and $13.2 million, respectively, and subsequently repaid $34.4 million and $12.5 million, respectively, under these sell / buy transactions.

Accounting Pronouncements - Recently Adopted

Income Tax Accounting
In December 2019, Accounting Standards Update ("ASU") 2019-12, "Simplifying the Accounting for Income Taxes," was issued which eliminates some exceptions to the general approach in ASC Topic 740 "Income Taxes" and also provides clarification of other aspects of ASC 740. We adopted this standard effective January 1, 2020 on a prospective basis, and recognized an income tax benefit for the nine months ended September 30, 2020 based upon the application of our estimated annual effective tax rate to our pre-tax loss.

Credit Losses Measurement
In June 2016, ASU 2016-13, "Measurement of Credit Losses on Financial Instruments," was issued requiring measurement of all expected credit losses for certain types of financial instruments, including trade receivables, held at the reporting date based on historical experience, current conditions and reasonable and supportable forecasts. We adopted this standard effective January 1, 2020, at which time our review of historic and expected credit losses resulted in a decrease of $3.2 million in our reserve for doubtful accounts. Based upon our assessment of the potential impact of current and forecasted conditions, we increased our reserve for doubtful accounts by $1.8 million during the nine months ended September 30, 2020. Assumptions about the potential effects of the COVID-19 pandemic on our estimate of expected credit losses are inherently subjective and difficult to forecast. However, we believe that our current estimate of allowance for doubtful accounts to be reasonable based upon current information and forecasts.

NOTE 2: Holly Energy Partners

HEP is a publicly held master limited partnership that owns and operates logistic assets consisting of petroleum product and crude oil pipelines, terminals, tankage, loading rack facilities and refinery processing units that principally support our refining and marketing operations, as well as other third-party refineries, in the Mid-Continent, Southwest and Rocky Mountain regions of the United States. Additionally, as of September 30, 2020, HEP owned a 75% interest in UNEV Pipeline, LLC ("UNEV"), the owner of a pipeline running from Woods Cross, Utah to Las Vegas, Nevada (the "UNEV Pipeline") and associated product terminals, and a 50% ownership interest in each of Osage Pipe Line Company, LLC, the owner of a pipeline running from Cushing, Oklahoma to El Dorado, Kansas (the "Osage Pipeline"); Cheyenne Pipeline, LLC, the owner of a pipeline running from Fort Laramie, Wyoming to Cheyenne, Wyoming (the "Cheyenne Pipeline") and Cushing Connect Pipeline & Terminal LLC ("Cushing Connect"), the owner of a crude oil storage terminal in Cushing, Oklahoma and a to-be-constructed pipeline that will run from Cushing, Oklahoma to our Tulsa Refineries.

At September 30, 2020, we owned a 57% limited partner interest and a non-economic general partner interest in HEP. As the general partner of HEP, we have the sole ability to direct the activities that most significantly impact HEP's financial performance, and therefore as HEP's primary beneficiary, we consolidate HEP.

HEP has two primary customers (including us) and generates revenues by charging tariffs for transporting petroleum products and crude oil through its pipelines, by charging fees for terminalling refined products and other hydrocarbons, and by storing and providing other services at its storage tanks and terminals. Under our long-term transportation agreements with HEP (discussed further below), we accounted for 80% of HEP's total revenues for the nine months ended September 30, 2020. We do not provide financial or equity support through any liquidity arrangements and / or debt guarantees to HEP.

HEP has outstanding debt under a senior secured revolving credit agreement and its senior notes. HEP's creditors have no recourse to our assets. Furthermore, our creditors have no recourse to the assets of HEP and its consolidated subsidiaries. See Note 9 for a description of HEP's debt obligations.

HEP has risk associated with its operations. If a major customer of HEP were to terminate its contracts or fail to meet desired shipping or throughput levels for an extended period of time, revenue would be reduced and HEP could suffer substantial losses to the extent that a new customer is not found. In the event that HEP incurs a loss, our operating results will reflect HEP's loss, net of intercompany eliminations, to the extent of our ownership interest in HEP at that point in time.

Cushing Connect Joint Venture

In October 2019, HEP Cushing LLC ("HEP Cushing"), a wholly-owned subsidiary of HEP, and Plains Marketing, L.P. ("PMLP"), a wholly-owned subsidiary of Plains All American Pipeline, L.P. ("Plains"), formed a 50/50 joint venture, Cushing Connect, for (i) the development and construction of a new 160,000 barrel per day common carrier crude oil pipeline (the "Cushing Connect Pipeline") that will connect the Cushing, Oklahoma crude oil hub to our Tulsa Refineries and (ii) the ownership and operation of 1.5 million barrels of crude oil storage in Cushing, Oklahoma (the "Cushing Connect Terminal"). The Cushing Connect Terminal was fully in service beginning in April 2020, and the Cushing Connect Pipeline is expected to be placed in service during the first quarter of 2021. Long-term commercial agreements have been entered into to support the Cushing Connect assets.

Cushing Connect will contract with an affiliate of HEP to manage the construction and operation of the Cushing Connect Pipeline and with an affiliate of Plains to manage the operation of the Cushing Connect Terminal. The total investment in Cushing Connect will be shared proportionately among the partners, and HEP estimates its share of the cost of the Cushing Connect Terminal contributed by Plains and Cushing Connect Pipeline construction costs are approximately $65.0 million.

Cushing Connect and its two subsidiaries, Cushing Connect Pipeline and Cushing Connect Terminal, are each VIE's because they do not have sufficient equity at risk to finance their activities without additional financial support. HEP is the primary beneficiary of two of these entities as HEP is constructing and will operate the Cushing Connect Pipeline, and HEP has more ability to direct the activities that most significantly impact the financial performance of Cushing Connect and Cushing Connect Pipeline. Therefore, HEP consolidates these two entities. HEP is not the primary beneficiary of Cushing Connect Terminal, which HEP accounts for using the equity method of accounting.

Transportation Agreements
HEP serves our refineries under long-term pipeline, terminal and tankage throughput agreements and refinery processing tolling agreements expiring from 2021 through 2036. Under these agreements, we pay HEP fees to transport, store and process throughput volumes of refined products, crude oil and feedstocks on HEP's pipeline, terminals, tankage, loading rack facilities and refinery processing units that result in minimum annual payments to HEP including UNEV (a consolidated subsidiary of HEP). Under these agreements, the agreed upon tariff rates are subject to annual tariff rate adjustments on July 1 at a rate based upon the percentage change in Producer Price Index or Federal Energy Regulatory Commission index. As of September 30, 2020, these agreements result in minimum annualized payments to HEP of $351.1 million.

Our transactions with HEP and fees paid under our transportation agreements with HEP and UNEV are eliminated and have no impact on our consolidated financial statements.

Lessor Accounting
Our consolidated statements of income reflect lease revenue recognized by HEP for contracts with third parties in which HEP is the lessor.

One of HEP's throughput agreements with Delek US Holdings, Inc. ("Delek") was renewed during the three months ended June 30, 2020. Certain components of this agreement met the criteria of sales-type leases since the underlying assets are not expected to have an alternative use at the end of the lease term to anyone other than Delek. Under sales-type lease accounting, at the commencement date, the lessor recognizes a net investment in the lease, based on the estimated fair value of the underlying leased assets at contract inception, and derecognizes the underlying assets with the difference recorded as selling profit or loss arising from the lease. Therefore, HEP recognized a gain on sales-type leases totaling $33.8 million, during the three months ended June 30, 2020. This sales-type lease transaction, including the related gain, was a non-cash transaction.

Lease income recognized was as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
	(In thousands)			
Operating lease revenues	$ 5,080	$ 8,374	$ 18,812	$ 24,840
Gain on sales-type leases	$ —	$ —	$ 33,834	$ —
Sales-type lease interest income	$ 645	$ —	$ 1,287	$ —
Lease revenues relating to variable lease payments not included in measurement of the sales-type lease receivable	$ 335	$ —	$ 621	$ —

HEP Common Unit Continuous Offering Program
In May 2016, HEP established a continuous offering program under which HEP may issue and sell common units from time to time, representing limited partner interests, up to an aggregate gross sales amount of $200 million. During the nine months ended September 30, 2020, HEP did not issue any common units under this program. As of September 30, 2020, HEP has issued 2,413,153 common units under this program, providing $82.3 million in gross proceeds.

NOTE 3: Revenues

Substantially all revenue-generating activities relate to sales of refined product and excess crude oil inventories sold at market prices (variable consideration) under contracts with customers. Additionally, we have revenues attributable to HEP logistics services provided under petroleum product and crude oil pipeline transportation, processing, storage and terminalling agreements with third parties.

Disaggregated revenues were as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
	(In thousands)			
Revenues by type				
Refined product revenues				
Transportation fuels [(1)]	$ 1,949,381	$ 3,354,927	$ 5,812,974	$ 9,796,334
Specialty lubricant products [(2)]	421,254	461,669	1,232,491	1,413,194
Asphalt, fuel oil and other products [(3)]	171,844	299,305	518,485	767,023
Total refined product revenues	2,542,479	4,115,901	7,563,950	11,976,551
Excess crude oil revenues [(4)]	243,742	264,675	606,915	997,988
Transportation and logistic services	26,740	29,868	72,410	89,388
Other revenues [(5)]	6,439	14,384	39,600	40,763
Total sales and other revenues	$ 2,819,400	$ 4,424,828	$ 8,282,875	$ 13,104,690

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
	(In thousands)			
Refined product revenues by market				
United States				
Mid-Continent	$ 1,254,828	$ 2,191,014	$ 3,655,412	$ 6,283,488
Southwest	580,818	913,326	1,751,066	2,772,281
Rocky Mountains	343,905	611,003	1,087,657	1,739,401
Northeast	149,855	151,919	420,588	427,926
Canada	150,618	184,784	454,141	536,911
Europe, Asia and Latin America	62,455	63,855	195,086	216,544
Total refined product revenues	$ 2,542,479	$ 4,115,901	$ 7,563,950	$ 11,976,551

(1) Transportation fuels consist of gasoline, diesel and jet fuel.
(2) Specialty lubricant products consist of base oil, waxes, finished lubricants and other specialty fluids.
(3) Asphalt, fuel oil and other products revenue include revenues attributable to our Refining and Lubricants and Specialty Products segments of $140.2 million and $31.6 million, respectively, for the three months ended September 30, 2020, $421.0 million and $97.5 million, respectively for the nine months ended September 30, 2020, $231.4 million and $67.9 million, respectively, for the three months ended September 30, 2019, and $612.0 million and $155.0 million, respectively, for the nine months ended September 30, 2019.
(4) Excess crude oil revenues represent sales of purchased crude oil inventory that at times exceeds the supply needs of our refineries.
(5) Other revenues are principally attributable to our Refining segment.

Our consolidated balance sheet reflects contract liabilities related to unearned revenues attributable to future service obligations under HEP's third-party transportation agreements and production agreements from the acquisition of Sonneborn on February 1, 2019. The following table presents changes to our contract liabilities during the nine months ended September 30, 2020 and 2019.

	Nine Months Ended September 30,	
	2020	2019
	(In thousands)	
Balance at January 1	$ 4,652	$ 132
Sonneborn acquisition	—	6,463
Increase	21,583	19,255
Recognized as revenue	(18,224)	(21,135)
Balance at September 30	$ 8,011	$ 4,715

As of September 30, 2020, we have long-term contracts with customers that specify minimum volumes of gasoline, diesel, lubricants and specialty products to be sold ratably at market prices through 2025. Such volumes are typically nominated in the month preceding delivery and delivered ratably throughout the following month. Future prices are subject to market fluctuations and therefore, we have elected the exemption to exclude variable consideration under these contracts under Accounting Standards Codification 606-10-50-14A. Aggregate minimum volumes expected to be sold (future performance obligations) under our long-term product sales contracts with customers are as follows:

	Remainder of 2020	2021	2022	Thereafter	Total
			(In thousands)		
Refined product sales volumes (barrels)	5,047	16,047	12,799	24,465	58,358

Additionally, HEP has long-term contracts with third-party customers that specify minimum volumes of product to be transported through its pipelines and terminals that result in fixed-minimum annual revenues through 2025. Annual minimum revenues attributable to HEP's third-party contracts as of September 30, 2020 are presented below:

	Remainder of 2020	2021	2022	Thereafter	Total
			(In thousands)		
HEP contractual minimum revenues	$ 6,441	$ 21,942	$ 10,954	$ 20,292	$ 59,629

NOTE 4: Fair Value Measurements

Our financial instruments measured at fair value on a recurring basis consist of derivative instruments and RINs credit obligations.

Fair value measurements are derived using inputs (assumptions that market participants would use in pricing an asset or liability, including assumptions about risk). GAAP categorizes inputs used in fair value measurements into three broad levels as follows:

- (Level 1) Quoted prices in active markets for identical assets or liabilities.
- (Level 2) Observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets, similar assets and liabilities in markets that are not active or can be corroborated by observable market data.
- (Level 3) Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. This includes valuation techniques that involve significant unobservable inputs.

The carrying amounts of derivative instruments and RINs credit obligations at September 30, 2020 and December 31, 2019 were as follows:

		Fair Value by Input Level		
	Carrying Amount	Level 1	Level 2	Level 3
		(In thousands)		
September 30, 2020				
Assets:				
NYMEX futures contracts	$ 1,530	$ 1,530	$ —	$ —
Commodity price swaps	2,820	—	2,820	—
Commodity forward contracts	71	—	71	—
Total assets	$ 4,421	$ 1,530	$ 2,891	$ —
Liabilities:				
Commodity price swaps	$ 134	$ —	$ 134	$ —
Commodity forward contracts	58	—	58	—
Foreign currency forward contracts	3,589	—	3,589	—
RINs credit obligations (1)	6,710	—	6,710	—
Total liabilities	$ 10,491	$ —	$ 10,491	$ —
December 31, 2019				
Assets:				
Commodity price swaps	$ 13,455	$ —	$ 13,455	$ —
Commodity forward contracts	4,133	—	4,133	$ —
Total assets	$ 17,588	$ —	$ 17,588	$ —
Liabilities:				
NYMEX futures contracts	$ 2,578	$ 2,578	$ —	$ —
Commodity price swaps	1,230	—	1,230	—
Commodity forward contracts	3,685	—	3,685	—
Foreign currency forward contracts	6,722	—	6,722	—
Total liabilities	$ 14,215	$ 2,578	$ 11,637	$ —

(1) Represent obligations for RINs credits for which we did not have sufficient quantities at September 30, 2020 to satisfy our EPA regulatory blending requirements.

Level 1 Instruments
Our NYMEX futures contracts are exchange traded and are measured and recorded at fair value using quoted market prices, a Level 1 input.

Level 2 Instruments
Derivative instruments consisting of foreign currency forward contracts, commodity price swaps and forward sales and purchase contracts are measured and recorded at fair value using Level 2 inputs. The fair value of the commodity price swap contracts is based on the net present value of expected future cash flows related to both variable and fixed rate legs of the respective swap agreements. The measurements are computed using market-based observable input and quoted forward commodity prices with respect to our commodity price swaps. RINs credit obligations are valued based on current market RINs prices. The fair value of foreign currency forward contracts are based on values provided by a third party, which were derived using market quotes for similar type instruments, a Level 2 input.

Nonrecurring Fair Value Measurements
During the three months ended June 30, 2020, we recognized long-lived asset impairment charges based on fair value measurements utilized during our goodwill and long-lived asset impairment testing (see Note 1). The fair value measurements were based on a combination of valuation methods including discounted cash flows, the guideline public company and guideline transaction methods and obsolescence adjusted replacement costs, all of which are Level 3 inputs.

During the three months ended June 30, 2020, HEP recognized a gain on sales-type leases (see Note 2). The estimated fair value of the underlying leased assets at contract inception and the present value of the estimated unguaranteed residual asset at the end of the lease term were used in determining the net investment in leases and related recognized gain on sales-type leases. The asset valuation estimates included Level 3 inputs based on a replacement cost valuation method.

NOTE 5: Earnings Per Share

Basic earnings per share is calculated as net income (loss) attributable to HollyFrontier stockholders divided by the average number of shares of common stock outstanding. Diluted earnings per share assumes, when dilutive, the issuance of the net incremental shares from restricted stock units and performance share units. The following is a reconciliation of the denominators of the basic and diluted per share computations for net income (loss) attributable to HollyFrontier stockholders:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
	(In thousands, except per share data)			
Net income (loss) attributable to HollyFrontier stockholders	$ (2,401)	$ 261,813	$ (483,701)	$ 711,783
Participating securities' (restricted stock) share in earnings	—	385	—	1,033
Net income (loss) attributable to common shares	$ (2,401)	$ 261,428	$ (483,701)	$ 710,750
Average number of shares of common stock outstanding	162,015	163,676	161,927	167,935
Effect of dilutive variable restricted stock units and performance share units [(1)]	—	1,335	—	1,190
Average number of shares of common stock outstanding assuming dilution	162,015	165,011	161,927	169,125
Basic earnings (loss) per share	$ (0.01)	$ 1.60	$ (2.99)	$ 4.23
Diluted earnings (loss) per share	$ (0.01)	$ 1.58	$ (2.99)	$ 4.20
[(1)] Excludes anti-dilutive restricted and performance share units of:	566	109	550	120

NOTE 6: Stock-Based Compensation

We have a principal share-based compensation plan (the "2020 Long-Term Incentive Plan"), which allows us to grant new equity awards until February 12, 2030. We also have a long-term incentive compensation plan which expires pursuant to its terms on December 31, 2020 and will continue to govern outstanding equity awards granted thereunder; however, as of February 12, 2020, no new awards are being granted under this plan. The compensation cost charged against income for these plans was $6.9 million and $9.2 million for the three months ended September 30, 2020 and 2019, respectively, and $19.8 million and $30.0 million for the nine months ended September 30, 2020 and 2019, respectively. Our accounting policy for the recognition of compensation expense for awards with pro-rata vesting is to expense the costs ratably over the vesting periods.

Additionally, HEP maintains a share-based compensation plan for Holly Logistic Services, L.L.C.'s non-employee directors and certain executives and employees. Compensation cost attributable to HEP's share-based compensation plan was $0.6 million and $0.5 million for the three months ended September 30, 2020 and 2019, respectively, and $1.5 million and $1.8 million for the nine months ended September 30, 2020 and 2019, respectively.

Restricted Stock Units

Under our long-term incentive plan, we grant certain officers and other key employees restricted stock unit awards, which are payable in stock or cash and generally vest over a period of three years. Certain restricted stock unit award recipients have the right to receive dividends, however, restricted stock units do not have any other rights of absolute ownership. Upon vesting, restrictions on the restricted stock units lapse at which time they convert to common shares or cash. In addition, we grant non-employee directors restricted stock unit awards, which typically vest over a period of one year and are payable in stock. The fair value of each restricted stock unit award is measured based on the grant date market price of our common shares and is amortized over the respective vesting period. We account for forfeitures on an estimated basis.

A summary of restricted stock unit activity during the nine months ended September 30, 2020 is presented below:

Restricted Stock Units	Grants	Weighted Average Grant Date Fair Value	Aggregate Intrinsic Value ($000)
Outstanding at January 1, 2020	1,101,781	$ 53.30	
Granted	65,041	35.26	
Vested	(80,872)	44.40	
Forfeited	(70,884)	53.51	
Converted from performance share units	19,450	38.13	
Outstanding at September 30, 2020	1,034,516	52.41	$ 20,390

For the nine months ended September 30, 2020, restricted stock units vested having a grant date fair value of $3.6 million. As of September 30, 2020, there was $16.6 million of total unrecognized compensation cost related to non-vested restricted stock unit grants. That cost is expected to be recognized over a weighted-average period of 1.0 year.

Performance Share Units

Under our long-term incentive plan, we grant certain officers and other key employees performance share units, which are payable in stock or cash upon meeting certain criteria over the service period, and generally vest over a period of three years. Under the terms of our performance share unit grants, awards are subject to "financial performance" and "market performance" criteria. Financial performance is based on our financial performance compared to a peer group of independent refining companies, while market performance is based on the relative standing of total shareholder return achieved by HollyFrontier compared to peer group companies. The number of shares ultimately issued or cash paid under these awards can range from zero to 200% of target award amounts. Holders of performance share units have the right to receive dividend equivalents and other distributions with respect to such performance share units based on the target level of payout.

A summary of performance share unit activity and changes during the nine months ended September 30, 2020 is presented below:

Performance Share Units	Grants
Outstanding at January 1, 2020	375,588
Vested	(12,129)
Forfeited	(18,766)
Converted to restricted stock units	(19,450)
Outstanding at September 30, 2020	325,243

For the nine months September 30, 2020, we issued 7,889 shares of common stock, representing a 100% payout on vested performance share units having a grant date fair value of $0.5 million. As of September 30, 2020, there was $7.7 million of total unrecognized compensation cost related to non-vested performance share units having a grant date fair value of $58.07 per unit. That cost is expected to be recognized over a weighted-average period of 1.3 years.

NOTE 7: Inventories

Inventories consist of the following components:

	September 30, 2020	December 31, 2019
	(In thousands)	
Crude oil	$ 477,012	$ 489,169
Other raw materials and unfinished products[1]	288,006	394,045
Finished products[2]	636,739	639,938
Lower of cost or market reserve	(468,074)	(240,363)
Process chemicals[3]	28,615	36,786
Repair and maintenance supplies and other [4]	175,366	154,627
Total inventory	$ 1,137,664	$ 1,474,202

(1) Other raw materials and unfinished products include feedstocks and blendstocks, other than crude.
(2) Finished products include gasolines, jet fuels, diesels, lubricants, asphalts, LPG's and residual fuels.
(3) Process chemicals include additives and other chemicals.
(4) Includes RINs.

Our inventories that are valued at the lower of LIFO cost or market reflect a valuation reserve of $468.1 million and $240.4 million at September 30, 2020 and December 31, 2019, respectively. The December 31, 2019 market reserve of $240.4 million was reversed due to the sale of inventory quantities that gave rise to the 2019 reserve. A new market reserve of $468.1 million was established as of September 30, 2020 based on market conditions and prices at that time. The effect of the change in lower of cost or market reserve was a decrease to cost of products sold totaling $62.8 million for the three months ended September 30, 2020 and an increase to cost of products sold totaling $34.1 million for the three months ended September 30, 2019, and an increase to cost of products sold totaling $227.7 million for the nine months ended September 30, 2020 and a decrease to cost of products sold totaling $150.5 million for the nine months ended September 30, 2019.

At September 30, 2020, the LIFO value of inventory, net of the lower of cost or market reserve, was equal to current costs.

In connection with our announcement of the conversion of our Cheyenne Refinery to renewable diesel production, we recorded a reserve of $2.9 million and $9.0 million, for the three and the nine months September 30, 2020, respectively, against our repair and maintenance supplies inventory. This charge was recorded in operating expenses.

NOTE 8: Environmental

Environmental costs are charged to operating expenses if they relate to an existing condition caused by past operations and do not contribute to current or future revenue generation. We have ongoing investigations of environmental matters at various locations and routinely assess our recorded environmental obligations, if any, with respect to such matters. Liabilities are recorded when site restoration and environmental remediation, cleanup and other obligations are either known or considered probable and can be reasonably estimated. Such estimates are undiscounted and require judgment with respect to costs, time frame and extent of required remedial and cleanup activities and are subject to periodic adjustments based on currently available information. Recoveries of environmental costs through insurance, indemnification arrangements or other sources are included in other assets to the extent such recoveries are considered probable.

We incurred expense of $2.2 million and $1.8 million for the three months ended September 30, 2020 and 2019, respectively, and $4.2 million and $5.5 million for the nine months ended September 30, 2020 and 2019, respectively, for environmental remediation obligations. The accrued environmental liability reflected in our consolidated balance sheets was $115.5 million and $117.7 million at September 30, 2020 and December 31, 2019, respectively, of which $94.1 million and $95.6 million, respectively, were classified as other long-term liabilities. These accruals include remediation and monitoring costs expected to be incurred over an extended period of time (up to 30 years for certain projects). Estimated liabilities could increase in the future when the results of ongoing investigations become known, are considered probable and can be reasonably estimated.

NOTE 9: Debt

HollyFrontier Credit Agreement

We have a $1.35 billion senior unsecured revolving credit facility maturing in February 2022 (the "HollyFrontier Credit Agreement"). The HollyFrontier Credit Agreement may be used for revolving credit loans and letters of credit from time to time and is available to fund general corporate purposes. At September 30, 2020, we were in compliance with all covenants, had no outstanding borrowings and had outstanding letters of credit totaling $5.7 million under the HollyFrontier Credit Agreement.

HEP Credit Agreement

HEP has a $1.4 billion senior secured revolving credit facility maturing in July 2022 (the "HEP Credit Agreement") and is available to fund capital expenditures, investments, acquisitions, distribution payments, working capital and for general partnership purposes. It is also available to fund letters of credit up to a $50 million sub-limit and has a $300 million accordion. During the nine months ended September 30, 2020, HEP received advances totaling $219.5 million and repaid $237.0 million under the HEP Credit Agreement. At September 30, 2020, HEP was in compliance with all of its covenants, had outstanding borrowings of $948.0 million and no outstanding letters of credit under the HEP Credit Agreement.

HEP's obligations under the HEP Credit Agreement are collateralized by substantially all of HEP's assets and are guaranteed by HEP's material wholly-owned subsidiaries. Any recourse to the general partner would be limited to the extent of HEP Logistics Holdings, L.P.'s assets, which other than its investment in HEP are not significant. HEP's creditors have no recourse to our other assets. Furthermore, our creditors have no recourse to the assets of HEP and its consolidated subsidiaries.

HollyFrontier Senior Notes

On September 28, 2020, we completed a public offering of $350.0 million in aggregate principal amount of 2.625% senior notes maturing October 2023 (the "2.625% Senior Notes") and $400.0 million in aggregate principal amount of 4.500% senior notes maturing October 2030 (the "4.500% Senior Notes"). We intend to use the net proceeds for general corporate purposes, which may include capital expenditures.

As a result, as of September 30, 2020, our outstanding senior notes consist of $1.0 billion in aggregate principal amount of 5.875% senior notes maturing April 2026 (the "5.875% Senior Notes"), the 2.625% Senior Notes and the 4.500% Senior Notes (collectively, the "HollyFrontier Senior Notes"). The HollyFrontier Senior Notes are unsecured and unsubordinated obligations of ours and rank equally with all our other existing and future unsecured and unsubordinated indebtedness.

HollyFrontier Financing Arrangements

In December 2018, certain of our wholly-owned subsidiaries entered into financing arrangements whereby such subsidiaries sold a portion of their precious metals catalyst to a financial institution and then leased back the precious metals catalyst in exchange for total cash received of $32.5 million. The volume of the precious metals catalyst and the lease rate are fixed over the term of each lease, and the lease payments are recorded as interest expense. The leases mature on February 1, 2021. Upon maturity, we must either satisfy the obligation at fair market value or refinance to extend the maturity. These financing arrangements are recorded at a Level 2 fair value totaling $37.2 million and $40.0 million at September 30, 2020 and December 31, 2019, respectively, and are included in "Accrued liabilities" in our consolidated balance sheets. See Note 4 for additional information on Level 2 inputs.

HEP Senior Notes

On February 4, 2020, HEP closed a private placement of $500.0 million in aggregate principal amount of 5.0% HEP senior unsecured notes maturing February 2028 (the "HEP Senior Notes"). On February 5, 2020, HEP redeemed its existing $500.0 million aggregate principal amount of 6.0% senior notes maturing August 2024 at a redemption cost of $522.5 million. HEP recognized a $25.9 million early extinguishment loss consisting of a $22.5 million debt redemption premium and unamortized discount and financing costs of $3.4 million. HEP funded the $522.5 million redemption with proceeds from the issuance of its 5.0% senior notes and borrowings under the HEP Credit Agreement.

The HEP Senior Notes are unsecured and impose certain restrictive covenants, including limitations on HEP's ability to incur additional indebtedness, make investments, sell assets, incur certain liens, pay distributions, enter into transactions with affiliates, and enter into mergers. HEP was in compliance with the restrictive covenants for the HEP Senior Notes as of September 30, 2020. At any time when the HEP Senior Notes are rated investment grade by either Moody's or Standard & Poor's and no default or event of default exists, HEP will not be subject to many of the foregoing covenants. Additionally, HEP has certain redemption rights at varying premiums over face value under the HEP Senior Notes.

Indebtedness under the HEP Senior Notes is guaranteed by HEP's wholly-owned subsidiaries. HEP's creditors have no recourse to our assets. Furthermore, our creditors have no recourse to the assets of HEP and its consolidated subsidiaries.

The carrying amounts of long-term debt are as follows:

	September 30, 2020	December 31, 2019
	(In thousands)	
HollyFrontier		
2.625% Senior Notes	$ 350,000	$ —
5.875% Senior Notes	1,000,000	1,000,000
4.500% Senior Notes	400,000	—
	1,750,000	1,000,000
Unamortized discount and debt issuance costs	(13,525)	(6,391)
Total HollyFrontier long-term debt	1,736,475	993,609
HEP		
HEP Credit Agreement	948,000	965,500
5.0% Senior Notes	500,000	—
6.0% Senior Notes	—	500,000
	500,000	500,000
Unamortized discount and debt issuance costs	(8,126)	(3,469)
Total HEP long-term debt	1,439,874	1,462,031
Total long-term debt	$ 3,176,349	$ 2,455,640

The fair values of the senior notes are as follows:

	September 30, 2020	December 31, 2019
	(In thousands)	
HollyFrontier Senior Notes	$ 1,835,996	$ 1,127,610
HEP Senior Notes	$ 490,155	$ 522,045

These fair values are based on a Level 2 input. See Note 4 for additional information on Level 2 inputs.

We capitalized interest attributable to construction projects of $1.1 million and $0.7 million for the three months ended September 30, 2020 and 2019, respectively, and $2.4 million and $1.8 million for the nine months ended September 30, 2020 and 2019, respectively.

NOTE 10: Derivative Instruments and Hedging Activities

Commodity Price Risk Management
Our primary market risk is commodity price risk. We are exposed to market risks related to the volatility in crude oil and refined products, as well as volatility in the price of natural gas used in our refining operations. We periodically enter into derivative contracts in the form of commodity price swaps, forward purchase and sales and futures contracts to mitigate price exposure with respect to our inventory positions, natural gas purchases, sales prices of refined products and crude oil costs.

Foreign Currency Risk Management

We are exposed to market risk related to the volatility in foreign currency exchange rates. We periodically enter into derivative contracts in the form of foreign exchange forward and foreign exchange swap contracts to mitigate the exposure associated with fluctuations on intercompany notes with our foreign subsidiaries that are not denominated in the U.S. dollar.

Accounting Hedges

We have swap contracts serving as cash flow hedges against price risk on forecasted purchases of natural gas and to lock in basis spread differentials on forecasted purchases of crude oil. We also periodically have forward sales contracts that lock in the prices of future sales of crude oil and refined product. These contracts have been designated as accounting hedges and are measured at fair value with offsetting adjustments (gains/losses) recorded directly to other comprehensive income. These fair value adjustments are later reclassified to earnings as the hedging instruments mature.

The following table presents the pre-tax effect on other comprehensive income ("OCI") and earnings due to fair value adjustments and maturities of hedging instruments under hedge accounting:

	Net Unrealized Gain (Loss) Recognized in OCI		Gain (Loss) Reclassified into Earnings		
	Three Months Ended September 30,			Three Months Ended September 30,	
Derivatives Designated as Cash Flow Hedging Instruments	**2020**	**2019**	**Income Statement Location**	**2020**	**2019**
			(In thousands)		
Commodity contracts	$ 2,492	$ (7,562)	Sales and other revenues	$ (5,217)	$ —
			Cost of products sold	983	6,027
			Operating expenses	(352)	(454)
Total	$ 2,492	$ (7,562)		$ (4,586)	$ 5,573

	Net Unrealized Gain (Loss) Recognized in OCI		Gain (Loss) Reclassified into Earnings		
	Nine Months Ended September 30,			Nine Months Ended September 30,	
Derivatives Designated as Cash Flow Hedging Instruments	**2020**	**2019**	**Income Statement Location**	**2020**	**2019**
			(In thousands)		
Commodity contracts	$ (3,918)	$ 372	Sales and other revenues	$ (5,168)	$ (1,799)
			Cost of products sold	3,272	15,323
			Operating expenses	(1,515)	(987)
Total	$ (3,918)	$ 372		$ (3,411)	$ 12,537

Economic Hedges

We have commodity contracts including contracts to lock in basis spread differentials on forecasted purchases of crude oil, swap contracts to lock in the crack spread of WTI and gasoline, NYMEX futures contracts to lock in prices on forecasted purchases and sales of inventory and forward purchase and sell contracts that serve as economic hedges (derivatives used for risk management, but not designated as accounting hedges). We also have forward currency contracts to fix the rate of foreign currency. In addition, our catalyst financing arrangements discussed in Note 9 could require repayment under certain conditions based on the future pricing of platinum, which is an embedded derivative. These contracts are measured at fair value with offsetting adjustments (gains/losses) recorded directly to income.

The following table presents the pre-tax effect on income due to maturities and fair value adjustments of our economic hedges:

Derivatives Not Designated as Hedging Instruments	Income Statement Location	Gain (Loss) Recognized in Earnings Three Months Ended September 30, 2020	Three Months Ended September 30, 2019	Nine Months Ended September 30, 2020	Nine Months Ended September 30, 2019
		(In thousands)			
Commodity contracts	Cost of products sold	$ 2,880	$ 8,640	$ 20,789	$ 1,561
	Interest expense	(2,170)	(1,720)	2,542	(2,995)
Foreign currency contracts	Gain (loss) on foreign currency transactions	(8,177)	5,713	10,983	(8,983)
	Total	$ (7,467)	$ 12,633	$ 34,314	$ (10,417)

As of September 30, 2020, we have the following notional contract volumes related to outstanding derivative instruments:

	Total Outstanding Notional	Notional Contract Volumes by Year of Maturity 2020	2021	Unit of Measure
Derivatives Designated as Hedging Instruments				
Natural gas price swaps - long	2,250,000	450,000	1,800,000	MMBTU
Crude oil price swaps (basis spread) - long	1,196,000	1,196,000	—	Barrels
Derivatives Not Designated as Hedging Instruments				
NYMEX futures (WTI) - short	1,045,000	830,000	215,000	Barrels
Crude oil price swaps (basis spread) - long	368,000	368,000	—	Barrels
WTI and gasoline crack spread swaps - short	100,000	100,000	—	Barrels
Forward gasoline and diesel contracts - long	200,000	200,000	—	Barrels
Foreign currency forward contracts	419,278,042	106,910,645	312,367,397	U.S. dollar
Forward commodity contracts (platinum)	40,867	—	40,867	Troy ounces

The following table presents the fair value and balance sheet locations of our outstanding derivative instruments. These amounts are presented on a gross basis with offsetting balances that reconcile to a net asset or liability position in our consolidated balance sheets. We present on a net basis to reflect the net settlement of these positions in accordance with provisions of our master netting arrangements.

	Derivatives in Net Asset Position			Derivatives in Net Liability Position		
	Gross Assets	Gross Liabilities Offset in Balance Sheet	Net Assets Recognized in Balance Sheet	Gross Liabilities	Gross Assets Offset in Balance Sheet	Net Liabilities Recognized in Balance Sheet
	(In thousands)					
September 30, 2020						
Derivatives designated as cash flow hedging instruments:						
Commodity price swap contracts	$ 915	$ (263)	$ 652	$ 58	$ —	$ 58
	$ 915	$ (263)	$ 652	$ 58	$ —	$ 58
Derivatives not designated as cash flow hedging instruments:						
NYMEX futures contracts	$ 1,530	$ —	$ 1,530	$ —	$ —	$ —
Commodity price swap contracts	2,168	—	2,168	76	—	76
Commodity forward contracts	71	—	71	58	—	58
Foreign currency forward contracts	—	—	—	5,397	(1,808)	3,589
	$ 3,769	$ —	$ 3,769	$ 5,531	$ (1,808)	$ 3,723
Total net balance			$ 4,421			$ 3,781
Balance sheet classification:	Prepayment and other		$ 4,421	Accrued liabilities		$ 3,723
				Other long-term liabilities		58
			$ 4,421			$ 3,781

	Derivatives in Net Asset Position			Derivatives in Net Liability Position		
	Gross Assets	Gross Liabilities Offset in Balance Sheet	Net Assets Recognized in Balance Sheet	Gross Liabilities	Gross Assets Offset in Balance Sheet	Net Liabilities Recognized in Balance Sheet
	(In thousands)					
December 31, 2019						
Derivatives designated as cash flow hedging instruments:						
Commodity price swap contracts	$ 7,526	$ (1,784)	$ 5,742	$ 1,230	$ —	$ 1,230
	$ 7,526	$ (1,784)	$ 5,742	$ 1,230	$ —	$ 1,230
Derivatives not designated as cash flow hedging instruments:						
NYMEX futures contracts	$ —	$ —	$ —	$ 2,578	$ —	$ 2,578
Commodity price swap contracts	7,713	—	7,713	—	—	—
Commodity forward contracts	4,133	—	4,133	3,685	—	3,685
Foreign currency forward contracts	—	—	—	6,722	—	6,722
	$ 11,846	$ —	$ 11,846	$ 12,985	$ —	$ 12,985
Total net balance			$ 17,588			$ 14,215
Balance sheet classification:	Prepayment and other		$ 17,588	Accrued liabilities		$ 12,985
				Other long-term liabilities		1,230
			$ 17,588			$ 14,215

At September 30, 2020, we had a pre-tax net unrealized gain of $0.6 million classified in accumulated other comprehensive income that relates to all accounting hedges having contractual maturities through 2021. Assuming commodity prices remain unchanged, an unrealized gain of $0.7 million will be effectively transferred from accumulated other comprehensive income into the statement of income as the hedging instruments contractually mature over the next twelve-month period.

NOTE 11: Equity

In November 2019, our Board of Directors approved a $1.0 billion share repurchase program, which replaced all existing share repurchase programs, authorizing us to repurchase common stock in the open market or through privately negotiated transactions. The timing and amount of stock repurchases will depend on market conditions and corporate, regulatory and other relevant considerations. This program may be discontinued at any time by the Board of Directors. As of September 30, 2020, we had not repurchased common stock under this stock repurchase program. In addition, we are authorized by our Board of Directors to repurchase shares in an amount sufficient to offset shares issued under our compensation programs.

During the nine months ended September 30, 2020 and 2019, we withheld 105,787 and 5,359, respectively, shares of our common stock from certain employees. These withholdings were made under the terms of restricted stock unit and performance share unit agreements upon vesting, at which time, we concurrently made cash payments to fund payroll and income taxes on behalf of officers and employees who elected to have shares withheld from vested amounts to pay such taxes.

NOTE 12: Other Comprehensive Income

The components and allocated tax effects of other comprehensive income are as follows:

	Before-Tax	Tax Expense (Benefit)	After-Tax
		(In thousands)	
Three Months Ended September 30, 2020			
Net change in foreign currency translation adjustment	$ 7,727	$ 1,705	$ 6,022
Net unrealized gain on hedging instruments	2,492	636	1,856
Net change in pension and other post-retirement benefit obligations	—	1	(1)
Other comprehensive income attributable to HollyFrontier stockholders	$ 10,219	$ 2,342	$ 7,877
Three Months Ended September 30, 2019			
Net change in foreign currency translation adjustment	$ (9,311)	$ (1,959)	$ (7,352)
Net unrealized loss on hedging instruments	(7,562)	(1,929)	(5,633)
Other comprehensive loss attributable to HollyFrontier stockholders	$ (16,873)	$ (3,888)	$ (12,985)
Nine Months Ended September 30, 2020			
Net change in foreign currency translation adjustment	$ (2,149)	$ (434)	$ (1,715)
Net unrealized loss on hedging instruments	(3,918)	(1,000)	(2,918)
Net change in pension and other post-retirement benefit obligations	(42)	(3)	(39)
Other comprehensive loss attributable to HollyFrontier stockholders	$ (6,109)	$ (1,437)	$ (4,672)
Nine Months Ended September 30, 2019			
Net change in foreign currency translation adjustment	$ 4,212	$ 896	$ 3,316
Net unrealized gain on hedging instruments	372	94	278
Other comprehensive income attributable to HollyFrontier stockholders	$ 4,584	$ 990	$ 3,594

The following table presents the income statement line item effects for reclassifications out of accumulated other comprehensive income ("AOCI"):

AOCI Component	Gain (Loss) Reclassified From AOCI		Income Statement Line Item
	Three Months Ended September 30,		
	2020	2019	
	(In thousands)		
Hedging instruments:			
Commodity price swaps	$ (5,217)	$ —	Sales and other revenues
	983	6,027	Cost of products sold
	(352)	(454)	Operating expenses
	(4,586)	5,573	
	(1,169)	1,421	Income tax expense (benefit)
Total reclassifications for the period	$ (3,417)	$ 4,152	Net of tax
	Nine Months Ended September 30,		
	2020	2019	
Hedging instruments:			
Commodity price swaps	$ (5,168)	$ (1,799)	Sales and other revenues
	3,272	15,323	Cost of products sold
	(1,515)	(987)	Operating expenses
	(3,411)	12,537	
	(870)	3,197	Income tax expense (benefit)
Total reclassifications for the period	$ (2,541)	$ 9,340	Net of tax

Accumulated other comprehensive income in the equity section of our consolidated balance sheets includes:

	September 30, 2020	December 31, 2019
	(In thousands)	
Foreign currency translation adjustment	$ (3,902)	$ (2,187)
Unrealized loss on pension obligation	(1,798)	(1,733)
Unrealized gain on post-retirement benefit obligations	15,359	15,333
Unrealized gain on hedging instruments	443	3,361
Accumulated other comprehensive income	$ 10,102	$ 14,774

NOTE 13: Post-retirement Plans

PCLI has union and non-union pension plans which are closed to new entrants. In addition, Sonneborn employees in the Netherlands have a defined benefit pension plan which was frozen and all plan participants became inactive in 2016. Our net periodic pension expense consisted of the following components:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
	(In thousands)			
Service cost - benefit earned during the period	$ 1,117	$ 1,209	$ 3,321	$ 3,605
Interest cost on projected benefit obligations	428	450	1,287	1,325
Expected return on plan assets	(1,016)	(822)	(3,029)	(2,441)
Amortization of loss	—	15	—	45
Net periodic pension expense	$ 529	$ 852	$ 1,579	$ 2,534

The expected long-term annual rates of return on plan assets are 5.75% and 1.50% for the PCLI and Sonneborn plans, respectively. These rates were used in measuring 2020 net periodic benefit costs.

We have post-retirement healthcare and other benefits that are available to certain of our employees who satisfy certain age and service requirements. The net periodic benefit credit of our post-retirement healthcare and other benefits plans consisted of the following components

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
	(In thousands)			
Service cost – benefit earned during the period	$ 451	$ 387	$ 1,352	$ 1,161
Interest cost on projected benefit obligations	237	267	710	801
Amortization of prior service credit	(870)	(870)	(2,611)	(2,611)
Amortization of (gain) loss	13	(22)	38	(66)
Net periodic post-retirement credit	$ (169)	$ (238)	$ (511)	$ (715)

The components, other than service cost, of our net periodic pension expense and net periodic post-retirement credit are recorded in Other, net in our consolidated statements of income.

NOTE 14: Contingencies

We are a party to various litigation and legal proceedings which we believe, based on advice of counsel, will not either individually or in the aggregate have a materially adverse effect on our financial condition, results of operations or cash flows.

We filed a business interruption claim with our insurance carriers related to a loss at our Woods Cross Refinery that occurred in the first quarter 2018. During the three months ended September 30, 2020, we reached a final settlement agreement regarding the amounts owed to us pursuant to our business interruption coverage, and we recognized a gain of $81.0 million, which is reflected in our Corporate and Other segment.

During 2017, 2018 and 2019, the EPA granted the Cheyenne Refinery and Woods Cross Refinery each a one-year small refinery exemption from the Renewable Fuel Standard ("RFS") program requirements for the 2016, 2017 and 2018, respectively, calendar years. As a result, the Cheyenne Refinery's and Woods Cross Refinery's gasoline and diesel production are not subject to the Renewable Volume Obligation for the respective years. Upon each exemption granted, we increased our inventory of RINs and reduced our cost of products sold.

In 2019, various subsidiaries of HollyFrontier moved to intervene in four lawsuits brought by renewable fuel interest groups against the EPA in federal courts alleging violations of the RFS under the Clean Air Act and challenging the EPA's handling of small refinery exemptions. We intervened to vigorously defend the EPA's position on small refinery exemptions because we believe the EPA correctly applied applicable law to the matters at issue. The U.S. Court of Appeals for the DC Circuit dismissed one of these four lawsuits on November 12, 2019 for lack of jurisdiction. On January 24, 2020, in a second of these lawsuits, the U.S. Court of Appeals for the Tenth Circuit vacated the small refinery exemptions granted to two of our refineries for 2016 and remanded the case to the EPA for further proceedings. On March 24, 2020, various subsidiaries of HollyFrontier filed a Petition for Rehearing with the U.S. Court of Appeals for the Tenth Circuit. On April 7, 2020, the Tenth Circuit denied our request to reconsider its decision, and on April 15, 2020, the Tenth Circuit entered its mandate, remanding the matter back to the EPA. It is not clear at this time what steps the EPA will take with respect to our 2016 small refinery exemptions, or how the case will impact future small refinery exemptions. On September 4, 2020, various subsidiaries of HollyFrontier filed a Petition for a Writ of Certiorari with the U.S. Supreme Court appealing the Tenth Circuit decision. The third lawsuit is before the U.S. Court of Appeals for the Tenth Circuit, and the matter is fully briefed and remains pending before that court. The fourth lawsuit is before the U.S. Court of Appeals for the DC Circuit, and we anticipate briefing of the issues before the court to commence in the fourth quarter of 2020. We are unable to estimate the costs we may incur, if any, at this time. It is too early to assess how the matter currently on appeal to the U.S. Supreme Court will impact future small refinery exemptions or whether the remaining two cases are expected to have any impact on us.

NOTE 15: Segment Information

Our operations are organized into three reportable segments, Refining, Lubricants and Specialty Products and HEP. Our operations that are not included in the Refining, Lubricants and Specialty Products and HEP segments are included in Corporate and Other. Intersegment transactions are eliminated in our consolidated financial statements and are included in Eliminations. Corporate and Other and Eliminations are aggregated and presented under the Corporate, Other and Eliminations column.

The Refining segment represents the operations of the El Dorado, Tulsa, Navajo, Cheyenne and Woods Cross Refineries and HFC Asphalt (aggregated as a reportable segment). Refining activities involve the purchase and refining of crude oil and wholesale and branded marketing of refined products, such as gasoline, diesel fuel and jet fuel. These petroleum products are primarily marketed in the Mid-Continent, Southwest and Rocky Mountain regions of the United States. HFC Asphalt operates various asphalt terminals in Arizona, New Mexico and Oklahoma.

The Lubricants and Specialty Products segment involves PCLI's production operations, located in Mississauga, Ontario, that includes lubricant products such as base oils, white oils, specialty products and finished lubricants, and the operations of our Petro-Canada Lubricants business that includes the marketing of products to both retail and wholesale outlets through a global sales network with locations in Canada, the United States, Europe and China. Additionally, the Lubricants and Specialty Products segment includes specialty lubricant products produced at our Tulsa Refineries that are marketed throughout North America and are distributed in Central and South America and Red Giant Oil, one of the largest suppliers of locomotive engine oil in North America. Also, effective with our acquisition that closed February 1, 2019, the Lubricants and Specialty Products segment includes Sonneborn, a producer of specialty hydrocarbon chemicals such as white oils, petrolatums and waxes with manufacturing facilities in the United States and Europe.

The HEP segment includes all of the operations of HEP, which owns and operates logistics and refinery assets consisting of petroleum product and crude oil pipelines, terminals, tankage, loading rack facilities and refinery processing units in the Mid-Continent, Southwest and Rocky Mountain regions of the United States. As of September 30, 2020, the HEP segment also includes a 75% ownership interest in UNEV (a consolidated subsidiary of HEP) and 50% ownership interests in each of the Osage Pipeline, the Cheyenne Pipeline and Cushing Connect. Revenues from the HEP segment are earned through transactions with unaffiliated parties for pipeline transportation, rental and terminalling operations as well as revenues relating to pipeline transportation services provided for our refining operations. Due to certain basis differences, our reported amounts for the HEP segment may not agree to amounts reported in HEP's periodic public filings.

The accounting policies for our segments are the same as those described in the summary of significant accounting policies in our Annual Report on Form 10-K for the year ended December 31, 2019.

	Refining	Lubricants and Specialty Products	HEP	Corporate, Other and Eliminations [(2)]	Consolidated Total
			(In thousands)		
Three Months Ended September 30, 2020					
Sales and other revenues:					
Revenues from external customers	$ 2,339,782	$ 452,878	$ 26,740	$ —	$ 2,819,400
Intersegment revenues	56,331	2,164	100,991	(159,486)	—
	$ 2,396,113	$ 455,042	$ 127,731	$ (159,486)	$ 2,819,400
Cost of products sold (exclusive of lower of cost or market inventory)	$ 2,211,342	$ 302,703	$ —	$ (136,807)	$ 2,377,238
Lower of cost or market inventory valuation adjustment	$ (62,849)	$ —	$ —	$ —	$ (62,849)
Operating expenses	$ 256,079	$ 54,488	$ 40,003	$ (18,074)	$ 332,496
Selling, general and administrative expenses	$ 30,866	$ 36,773	$ 2,332	$ 4,482	$ 74,453
Depreciation and amortization	$ 79,146	$ 17,432	$ 24,109	$ 4,593	$ 125,280
Income (loss) from operations	$ (118,471)	$ 43,646	$ 61,287	$ (13,680)	$ (27,218)
Earnings of equity method investments	$ —	$ —	$ 1,316	$ —	$ 1,316
Capital expenditures	$ 41,740	$ 6,995	$ 7,902	$ 26,635	$ 83,272
Three Months Ended September 30, 2019					
Sales and other revenues:					
Revenues from external customers	$ 3,865,399	$ 529,561	$ 29,868	$ —	$ 4,424,828
Intersegment revenues	81,571	8,157	106,027	(195,755)	—
	$ 3,946,970	$ 537,718	$ 135,895	$ (195,755)	$ 4,424,828
Cost of products sold (exclusive of lower of cost or market inventory)	$ 3,177,167	$ 397,926	$ —	$ (171,326)	$ 3,403,767
Lower of cost or market inventory valuation adjustment	$ 34,062	$ —	$ —	$ —	$ 34,062
Operating expenses	$ 276,869	$ 57,974	$ 44,924	$ (34,189)	$ 345,578
Selling, general and administrative expenses	$ 31,707	$ 43,875	$ 2,714	$ 9,330	$ 87,626
Depreciation and amortization	$ 76,765	$ 22,700	$ 24,121	$ 3,430	$ 127,016
Income (loss) from operations	$ 350,400	$ 15,243	$ 64,136	$ (3,000)	$ 426,779
Earnings of equity method investments	$ —	$ —	$ 1,334	$ —	$ 1,334
Capital expenditures	$ 53,506	$ 8,697	$ 6,076	$ 6,310	$ 74,589

	Refining	Lubricants and Specialty Products	HEP	Corporate, Other and Eliminations [2]	Consolidated Total
			(In thousands)		
Nine Months Ended September 30, 2020					
Sales and other revenues:					
Revenues from external customers	$ 6,880,444	$ 1,330,021	$ 72,410	$ —	$ 8,282,875
Intersegment revenues	178,039	8,911	297,982	(484,932)	—
	$ 7,058,483	$ 1,338,932	$ 370,392	$ (484,932)	$ 8,282,875
Cost of products sold (exclusive of lower of cost or market inventory)	$ 6,113,530	$ 952,430	$ —	$ (418,000)	$ 6,647,960
Lower of cost or market inventory valuation adjustment	$ 227,711	$ —	$ —	$ —	$ 227,711
Operating expenses	$ 754,612	$ 156,459	$ 109,721	$ (56,592)	$ 964,200
Selling, general and administrative expenses	$ 94,677	$ 121,654	$ 7,569	$ 13,659	$ 237,559
Depreciation and amortization	$ 251,019	$ 59,260	$ 72,095	$ 13,659	$ 396,033
Long-lived asset impairment [1]	$ 215,242	$ 204,708	$ 16,958	$ —	$ 436,908
Income (loss) from operations	$ (598,308)	$ (155,579)	$ 164,049	$ (37,658)	$ (627,496)
Earnings of equity method investments	$ —	$ —	$ 5,186	$ —	$ 5,186
Capital expenditures	$ 106,856	$ 20,387	$ 38,642	$ 47,123	$ 213,008
Nine Months Ended September 30, 2019					
Sales and other revenues:					
Revenues from external customers	$ 11,446,841	$ 1,568,241	$ 89,388	$ 220	$ 13,104,690
Intersegment revenues	244,799	8,157	311,755	(564,711)	—
	$ 11,691,640	$ 1,576,398	$ 401,143	$ (564,491)	$ 13,104,690
Cost of products sold (exclusive of lower of cost or market inventory)	$ 9,598,539	$ 1,202,296	$ —	$ (492,979)	$ 10,307,856
Lower of cost or market inventory valuation adjustment	$ (150,483)	$ —	$ —	$ —	$ (150,483)
Operating expenses	$ 794,081	$ 170,655	$ 123,045	$ (77,359)	$ 1,010,422
Selling, general and administrative expenses	$ 88,322	$ 125,681	$ 7,322	$ 39,652	$ 260,977
Depreciation and amortization	$ 227,405	$ 65,891	$ 72,192	$ 9,857	$ 375,345
Goodwill impairment	$ —	$ 152,712	$ —	$ —	$ 152,712
Income (loss) from operations	$ 1,133,776	$ (140,837)	$ 198,584	$ (43,662)	$ 1,147,861
Earnings of equity method investments	$ —	$ —	$ 5,217	$ —	$ 5,217
Capital expenditures	$ 129,167	$ 25,887	$ 23,828	$ 16,175	$ 195,057

(1) The results of our HEP reportable segment for the nine months ended September 30, 2020 include a long-lived asset impairment charge attributed to HEP’s logistics assets at our Cheyenne Refinery.

(2) For the three and nine months ended September 30, 2020, Corporate and Other includes $1.8 million and $2.7 million, respectively, of operating expenses and $20.5 million and $33.1 million, respectively, of capital expenditures related to the construction of our renewable diesel units.

	Refining	Lubricants and Specialty Products	HEP	Corporate, Other and Eliminations	Consolidated Total
			(In thousands)		
September 30, 2020					
Cash and cash equivalents	$ 6,085	$ 211,646	$ 18,091	$ 1,289,066	$ 1,524,888
Total assets	$ 6,197,301	$ 1,933,482	$ 2,193,770	$ 1,255,188	$ 11,579,741
Long-term debt	$ —	$ —	$ 1,439,874	$ 1,736,475	$ 3,176,349
December 31, 2019					
Cash and cash equivalents	$ 9,755	$ 169,277	$ 13,287	$ 692,843	$ 885,162
Total assets	$ 7,189,094	$ 2,223,418	$ 2,205,437	$ 546,892	$ 12,164,841
Long-term debt	$ —	$ —	$ 1,462,031	$ 993,609	$ 2,455,640

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

This Item 2 contains "forward-looking" statements. See "Forward-Looking Statements" at the beginning of Part I of this Quarterly Report on Form 10-Q. In this document, the words "we," "our," "ours" and "us" refer only to HollyFrontier Corporation ("HollyFrontier") and its consolidated subsidiaries or to HollyFrontier or an individual subsidiary and not to any other person with certain exceptions. Generally, the words "we," "our," "ours" and "us" include Holly Energy Partners, L.P. ("HEP") and its subsidiaries as consolidated subsidiaries of HollyFrontier, unless when used in disclosures of transactions or obligations between HEP and HollyFrontier or its other subsidiaries. This document contains certain disclosures of agreements that are specific to HEP and its consolidated subsidiaries and do not necessarily represent obligations of HollyFrontier. When used in descriptions of agreements and transactions, "HEP" refers to HEP and its consolidated subsidiaries.

OVERVIEW

We are principally an independent petroleum refiner that produces high-value light products such as gasoline, diesel fuel, jet fuel, specialty lubricant products and specialty and modified asphalt. As of September 30, 2020, we owned and operated refineries located in El Dorado, Kansas (the "El Dorado Refinery"), Tulsa, Oklahoma (the "Tulsa Refineries"), which comprise two production facilities, the Tulsa West and East facilities, Artesia, New Mexico, which operates in conjunction with crude, vacuum distillation and other facilities situated 65 miles away in Lovington, New Mexico (collectively, the "Navajo Refinery") and Woods Cross, Utah (the "Woods Cross Refinery"). As of September 30, 2020, we owned a facility in Cheyenne, Wyoming, which operated as a petroleum refinery until early August 2020 (the "Cheyenne Refinery"). We market our refined products principally in the Southwest United States, the Rocky Mountains extending into the Pacific Northwest and in other neighboring Plains states. In addition, we produce base oils and other specialized lubricants in the United States, Canada and the Netherlands, and export products to more than 80 countries. We also own a 57% limited partner interest and a non-economic general partner interest in HEP, a master limited partnership that provides petroleum product and crude oil transportation, terminalling, storage and throughput services to the petroleum industry, including HollyFrontier Corporation subsidiaries.

In the third quarter of 2020, we permanently ceased petroleum refining operations at our Cheyenne Refinery and subsequently began converting certain assets at our Cheyenne Refinery to renewable diesel production. This decision was primarily based on a positive outlook in the market for renewable diesel and the expectation that future free cash flow generation at our Cheyenne Refinery would be challenged due to lower gross margins resulting from the economic impact of the COVID-19 pandemic and compressed crude differentials due to dislocations in the crude oil market. Additional factors included uncompetitive operating and maintenance costs forecasted for our Cheyenne Refinery and the anticipated loss of the Environmental Protection Agency's ("EPA") small refinery exemption. The renewable diesel units are expected to be completed in the first quarter of 2022 with an expected capital budget between $125-$175 million.

During the second quarter of 2020, we recorded a long-lived asset impairment of $232.2 million related to our Cheyenne Refinery asset group. In connection with the cessation of petroleum refining operations at our Cheyenne Refinery, we recognized $12.3 million in decommissioning expense during the third quarter of 2020. In addition, during the three and nine months ended September 30, 2020, we recorded $2.4 million and $3.5 million, respectively, in employee severance costs related to the conversion of our Cheyenne Refinery to renewable diesel production. These decommissioning and severance costs were recognized in operating expenses and were reported in our Refining segment.

During the second quarter of 2020, we also initiated and completed a corporate restructuring, which is expected to save approximately $30 million per year of ongoing cash expenses. As a result of this restructuring, we recorded $3.7 million in employee severance costs, which were recognized primarily as operating expenses in our Refining segment and selling, general and administrative expenses in our Corporate and Other segment.

On November 12, 2018, we entered into an equity purchase agreement to acquire 100% of the issued and outstanding capital stock of Sonneborn US Holdings Inc. and 100% of the membership rights in Sonneborn Coöperatief U.A. (collectively, "Sonneborn"). The acquisition closed on February 1, 2019. Cash consideration paid was $662.7 million. Sonneborn is a producer of specialty hydrocarbon chemicals such as white oils, petrolatums and waxes with manufacturing facilities in the United States and Europe.

For the three months ended September 30, 2020, net loss attributable to HollyFrontier stockholders was $(2.4) million compared to net income of $261.8 million for the three months ended September 30, 2019. For the nine months ended September 30, 2020, net loss attributable to HollyFrontier stockholders was $(483.7) million compared to net income of $711.8 million for the nine months ended September 30, 2019. Included in our financial results for the third quarter of 2020 was an inventory reserve adjustment that resulted in a benefit of $62.8 million and an $81.0 million gain recognized upon settlement of a business interruption insurance claim. Third quarter earnings reflect continued weak demand for transportation fuels across the industry, offset by an increase in global demand for finished lubricants and base oils. Gross refining margin per produced barrel sold in our Refining segment decreased 71% for the three months ended September 30, 2020 over the same period of 2019.

Pursuant to the 2007 Energy Independence and Security Act, the EPA promulgated the Renewable Fuel Standard ("RFS") regulations, which increased the volume of renewable fuels mandated to be blended into the nation's fuel supply. The regulations, in part, require refiners to add annually increasing amounts of "renewable fuels" to their petroleum products or purchase credits, known as renewable identification numbers ("RINs"), in lieu of such blending. Compliance with RFS regulations significantly increases our cost of products sold, with RINs costs totaling $33.8 million for the three months ended September 30, 2020.

Impact of COVID-19 on Our Business

The COVID-19 pandemic caused a decline in U.S. and global economic activity starting in the first quarter of 2020. This decrease reduced both volumes and unit margins across our businesses, resulting in lower gross margins and earnings. Over the course of the third quarter of 2020, demand for transportation fuels continued to be weak compared to the third quarter of 2019, but showed incremental improvement over the second quarter of 2020. In response to this level of demand, during the third quarter of 2020, we operated our Refining segment refineries at an average crude charge of 390,580 BPD.

In our Lubricants and Specialty Products segment, the Rack Forward portion saw improvement in industrial and transportation-related end markets, which drove higher demand and unit margins during the third quarter of 2020. Within the Rack Back portion, demand for base oils increased to fourth quarter 2019 levels while supply was limited due to a number of factors, which drove higher margins and utilization at our facilities in the third quarter.

The stabilization of demand drove a broad increase in commodity prices, resulting in values for our inventories held at September 30, 2020 above the costs of these inventories using the last-in, first-out ("LIFO") method and in a lower of cost or market valuation gain of $62.8 million for the three months ended September 30, 2020.

Our standalone (excluding HEP) liquidity was approximately $2.9 billion at September 30, 2020, consisting of cash and cash equivalents of $1,506.8 million and an undrawn $1.35 billion credit facility maturing in 2022. Our standalone (excluding HEP) long-term debt was $1.75 billion as of September 30, 2020, which consists of $350.0 million in 2.625% senior notes due in 2023, $1.0 billion of 5.875% senior notes due in 2026 and $400.0 million in 4.500% senior notes due in 2030.

OUTLOOK

The impact of the COVID-19 pandemic on the global macroeconomy has created an unprecedented reduction in demand, as well as a lack of forward visibility, for many of the transportation fuels, lubricants and specialty products and the associated transportation and terminal services we provide. While we have seen continued improvement in demand during the third quarter and expect to see a recovery in demand for all of these essential products in the long term, there is limited visibility on the timing or level of the recovery in the near term.

In response to the COVID-19 pandemic, and with the health and safety of our employees as a top priority, we have continued several initiatives, including limiting onsite staff at all of our facilities, implementing a work-from-home policy for certain employees and restricting travel unless approved by senior leadership. We will continue to monitor COVID-19 developments and the dynamic environment to properly address these policies going forward.

Within our Refining segment, for the fourth quarter of 2020, we expect to run between 360,000-380,000 barrels per day of crude oil based on market demand for transportation fuels. Currently, the primary determinants of demand are the various government orders and guidance restricting or discouraging travel. We expect to adjust refinery production levels commensurate with market demand.

Within our Lubricants and Specialty Products segment, while we have withdrawn formal 2020 guidance, we expect the improved market conditions and increased demand that we experienced in the third quarter of 2020 to continue up until the normal seasonal decline in demand at year-end. Similar to our Refining segment, we expect to adjust production levels commensurate with market demand.

At HEP, we continued to see incremental improvement in demand for transportation and terminal services during the third quarter of 2020, particularly in HEP's assets around the Salt Lake City area, and we expect this trend to continue through the fourth quarter of 2020. HEP maintained its quarterly distribution to $0.35 per unit, representative of a distribution policy focused on funding all capital expenditures and distributions within its operating cash flow and improving distributable cash flow coverage to 1.3x or greater with the goal of reducing leverage to 3.0-3.5x.

During the third quarter of 2020, we increased our liquidity by $750.0 million with the issuance of $350.0 million in 2.625% senior notes due in 2023 and $400.0 million in 4.500% senior notes due in 2030. This additional liquidity may be used for general corporate purposes and is expected to support the planned growth of our renewables business and the unexpected economic impact of COVID-19, as needed. We do not intend to repurchase common stock under our $1.0 billion share repurchase program until commodity prices and demand for our products normalize.

On March 27, 2020, the U.S. government passed the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act"), an approximately $2 trillion stimulus package that includes various provisions intended to provide relief to individuals and businesses in the form of tax changes, loans and grants, among others. At this time, we have not sought relief in the form of loans or grants from the CARES Act; however, we have benefited from certain tax deferrals in the CARES Act and may benefit from other tax provisions if we meet the requirements to do so.

The extent to which our future results are affected by the COVID-19 pandemic will depend on various factors and consequences beyond our control, such as the duration and scope of the pandemic, additional actions by businesses and governments in response to the pandemic and the speed and effectiveness of responses to combat the virus. The COVID-19 pandemic, and the volatile regional and global economic conditions stemming from it, could also exacerbate the risk factors identified in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019 and in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2020. The COVID-19 pandemic may also materially adversely affect our results in a manner that is either not currently known or that we do not currently consider to be a significant risk to our business.

A more detailed discussion of our financial and operating results for the three and nine months ended September 30, 2020 and 2019 is presented in the following sections.

RESULTS OF OPERATIONS

Financial Data

	Three Months Ended September 30,		Change from 2019	
	2020	2019	Change	Percent
	(In thousands, except per share data)			
Sales and other revenues	$ 2,819,400	$ 4,424,828	$ (1,605,428)	(36) %
Operating costs and expenses:				
Cost of products sold (exclusive of depreciation and amortization):				
Cost of products sold (exclusive of lower of cost or market inventory valuation adjustment)	2,377,238	3,403,767	(1,026,529)	(30)
Lower of cost or market inventory valuation adjustment	(62,849)	34,062	(96,911)	(285)
	2,314,389	3,437,829	(1,123,440)	(33)
Operating expenses (exclusive of depreciation and amortization)	332,496	345,578	(13,082)	(4)
Selling, general and administrative expenses (exclusive of depreciation and amortization)	74,453	87,626	(13,173)	(15)
Depreciation and amortization	125,280	127,016	(1,736)	(1)
Total operating costs and expenses	2,846,618	3,998,049	(1,151,431)	(29)
Income (loss) from operations	(27,218)	426,779	(453,997)	(106)
Other income (expense):				
Earnings of equity method investments	1,316	1,334	(18)	(1)
Interest income	1,011	6,164	(5,153)	(84)
Interest expense	(30,589)	(36,027)	5,438	(15)
Gain on business interruption insurance settlement	81,000	—	81,000	—
Gain on foreign currency transactions	1,030	395	635	161
Other, net	1,368	2,356	(988)	(42)
	55,136	(25,778)	80,914	(314)
Income before income taxes	27,918	401,001	(373,083)	(93)
Income tax expense	4,573	103,021	(98,448)	(96)
Net income	23,345	297,980	(274,635)	(92)
Less net income attributable to noncontrolling interest	25,746	36,167	(10,421)	(29)
Net income (loss) attributable to HollyFrontier stockholders	$ (2,401)	$ 261,813	$ (264,214)	(101) %
Earnings (loss) per share attributable to HollyFrontier stockholders:				
Basic	$ (0.01)	$ 1.60	$ (1.61)	(101) %
Diluted	$ (0.01)	$ 1.58	$ (1.59)	(101) %
Cash dividends declared per common share	$ 0.35	$ 0.33	$ 0.02	6 %
Average number of common shares outstanding:				
Basic	162,015	163,676	(1,661)	(1) %
Diluted	162,015	165,011	(2,996)	(2) %

	Nine Months Ended September 30,		Change from 2019	
	2020	2019	Change	Percent
	(In thousands, except per share data)			
Sales and other revenues	$ 8,282,875	$ 13,104,690	$ (4,821,815)	(37) %
Operating costs and expenses:				
Cost of products sold (exclusive of depreciation and amortization):				
Cost of products sold (exclusive of lower of cost or market inventory valuation adjustment)	6,647,960	10,307,856	(3,659,896)	(36)
Lower of cost or market inventory valuation adjustment	227,711	(150,483)	378,194	(251)
	6,875,671	10,157,373	(3,281,702)	(32)
Operating expenses (exclusive of depreciation and amortization)	964,200	1,010,422	(46,222)	(5)
Selling, general and administrative expenses (exclusive of depreciation and amortization)	237,559	260,977	(23,418)	(9)
Depreciation and amortization	396,033	375,345	20,688	6
Long-lived asset and goodwill impairments	436,908	152,712	284,196	186
Total operating costs and expenses	8,910,371	11,956,829	(3,046,458)	(25)
Income (loss) from operations	(627,496)	1,147,861	(1,775,357)	(155)
Other income (expense):				
Earnings of equity method investments	5,186	5,217	(31)	(1)
Interest income	6,590	17,127	(10,537)	(62)
Interest expense	(85,923)	(106,938)	21,015	(20)
Gain on business interruption insurance settlement	81,000	—	81,000	—
Gain on sales-type leases	33,834	—	33,834	—
Loss on early extinguishment of debt	(25,915)	—	(25,915)	—
Gain (loss) on foreign currency transactions	(918)	4,873	(5,791)	(119)
Other, net	4,790	3,005	1,785	59
	18,644	(76,716)	95,360	(124)
Income (loss) before income taxes	(608,852)	1,071,145	(1,679,997)	(157)
Income tax expense (benefit)	(188,504)	279,862	(468,366)	(167)
Net income (loss)	(420,348)	791,283	(1,211,631)	(153)
Less net income attributable to noncontrolling interest	63,353	79,500	(16,147)	(20)
Net income (loss) attributable to HollyFrontier stockholders	$ (483,701)	$ 711,783	$ (1,195,484)	(168) %
Earnings (loss) per share attributable to HollyFrontier stockholders:				
Basic	$ (2.99)	$ 4.23	$ (7.22)	(171) %
Diluted	$ (2.99)	$ 4.20	$ (7.19)	(171) %
Cash dividends declared per common share	$ 1.05	$ 0.99	$ 0.06	6 %
Average number of common shares outstanding:				
Basic	161,927	167,935	(6,008)	(4) %
Diluted	161,927	169,125	(7,198)	(4) %

Balance Sheet Data

	September 30, 2020	December 31, 2019
	(Unaudited)	
	(In thousands)	
Cash and cash equivalents	$ 1,524,888	$ 885,162
Working capital	$ 2,081,978	$ 1,620,261
Total assets	$ 11,579,741	$ 12,164,841
Long-term debt	$ 3,176,349	$ 2,455,640
Total equity	$ 5,876,569	$ 6,509,426

Other Financial Data

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
	(In thousands)			
Net cash provided by operating activities	$ 81,748	$ 441,854	$ 391,050	$ 1,411,404
Net cash used for investing activities	$ (81,985)	$ (74,455)	$ (213,651)	$ (856,764)
Net cash provided by (used for) financing activities	$ 618,726	$ (299,473)	$ 463,207	$ (729,337)
Capital expenditures	$ 83,272	$ 74,588	$ 213,008	$ 195,057
EBITDA [1]	$ 157,030	$ 521,713	$ (196,839)	$ 1,456,801

(1) Earnings before interest, taxes, depreciation and amortization, which we refer to as "EBITDA," is calculated as net income (loss) attributable to HollyFrontier stockholders plus (i) interest expense, net of interest income, (ii) income tax provision, and (iii) depreciation and amortization. EBITDA is not a calculation provided for under GAAP; however, the amounts included in the EBITDA calculation are derived from amounts included in our consolidated financial statements. EBITDA should not be considered as an alternative to net income or operating income as an indication of our operating performance or as an alternative to operating cash flow as a measure of liquidity. EBITDA is not necessarily comparable to similarly titled measures of other companies. EBITDA is presented here because it is a widely used financial indicator used by investors and analysts to measure performance. EBITDA is also used by our management for internal analysis and as a basis for financial covenants. EBITDA presented above is reconciled to net income under "Reconciliations to Amounts Reported Under Generally Accepted Accounting Principles" following Item 3 of Part I of this Form 10-Q.

Segment Operating Data

Our operations are organized into three reportable segments, Refining, Lubricants and Specialty Products and HEP. See Note 15 "Segment Information" in the Notes to Consolidated Financial Statements for additional information on our reportable segments.

Refining Segment Operating Data

As of September 30, 2020, our refinery operations included the El Dorado, Tulsa, Navajo and Woods Cross Refineries. In early August 2020, the Cheyenne Refinery permanently ceased petroleum refining operations thus, the refining operating data for the three and nine months ended September 30, 2020 included the Cheyenne Refinery for the portion of the period it was in operation. The following tables set forth information, including non-GAAP performance measures, about our consolidated refinery operations. The cost of products and refinery gross and net operating margins do not include the non-cash effects of long-lived asset impairment charges, lower of cost or market inventory valuation adjustments and depreciation and amortization. Reconciliations to amounts reported under GAAP are provided under "Reconciliations to Amounts Reported Under Generally Accepted Accounting Principles" following Item 3 of Part I of this Form 10-Q.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Mid-Continent Region (El Dorado and Tulsa Refineries)				
Crude charge (BPD) [1]	244,200	294,380	234,550	257,590
Refinery throughput (BPD) [2]	257,280	307,720	249,430	272,440
Sales of produced refined products (BPD) [3]	243,830	290,930	239,800	260,780
Refinery utilization [4]	93.9 %	113.2 %	90.2 %	99.1 %
Average per produced barrel [5]				
Refinery gross margin	$ 3.21	$ 14.61	$ 6.41	$ 14.55
Refinery operating expenses [6]	5.47	5.05	5.47	5.48
Net operating margin	$ (2.26)	$ 9.56	$ 0.94	$ 9.07
Refinery operating expenses per throughput barrel [7]	$ 5.19	$ 4.77	$ 5.26	$ 5.25
Feedstocks:				
Sweet crude oil	62 %	59 %	58 %	56 %
Sour crude oil	18 %	21 %	19 %	23 %
Heavy sour crude oil	15 %	16 %	17 %	16 %
Other feedstocks and blends	5 %	4 %	6 %	5 %
Total	100 %	100 %	100 %	100 %

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Mid-Continent Region (El Dorado and Tulsa Refineries)				
Sales of produced refined products:				
Gasolines	53 %	49 %	52 %	51 %
Diesel fuels	35 %	34 %	34 %	32 %
Jet fuels	3 %	6 %	4 %	7 %
Fuel oil	1 %	1 %	1 %	1 %
Asphalt	2 %	4 %	3 %	3 %
Base oils	4 %	4 %	4 %	4 %
LPG and other	2 %	2 %	2 %	2 %
Total	100 %	100 %	100 %	100 %
Southwest Region (Navajo Refinery) [8]				
Crude charge (BPD) [1]	96,660	106,860	94,320	107,330
Refinery throughput (BPD) [2]	106,780	117,250	104,570	117,660
Sales of produced refined products (BPD) [3]	106,350	116,890	107,270	120,760
Refinery utilization [4]	96.7 %	106.9 %	94.3 %	107.3 %
Average per produced barrel [5]				
Refinery gross margin	$ 9.70	$ 18.61	$ 11.16	$ 19.35
Refinery operating expenses [6]	5.07	5.25	5.17	4.90
Net operating margin	$ 4.63	$ 13.36	$ 5.99	$ 14.45
Refinery operating expenses per throughput barrel [7]	$ 5.05	$ 5.23	$ 5.31	$ 5.03
Feedstocks:				
Sweet crude oil	25 %	22 %	24 %	21 %
Sour crude oil	66 %	69 %	66 %	70 %
Other feedstocks and blends	9 %	9 %	10 %	9 %
Total	100 %	100 %	100 %	100 %
Sales of produced refined products:				
Gasolines	55 %	50 %	54 %	51 %
Diesel fuels	34 %	40 %	36 %	39 %
Fuel oil	2 %	3 %	2 %	3 %
Asphalt	8 %	5 %	6 %	5 %
LPG and other	1 %	2 %	2 %	2 %
Total	100 %	100 %	100 %	100 %
Rocky Mountain Region (Cheyenne and Woods Cross Refineries) [8]				
Crude charge (BPD) [1]	49,720	74,790	63,300	78,530
Refinery throughput (BPD) [2]	57,040	81,830	69,370	85,300
Sales of produced refined products (BPD) [3]	57,110	77,680	67,070	77,890
Refinery utilization [4]	51.3 %	77.1 %	65.3 %	81.0 %
Average per produced barrel [5]				
Refinery gross margin	$ 3.39	$ 24.97	$ 10.63	$ 19.73
Refinery operating expenses [6]	15.94	11.95	13.25	11.39
Net operating margin	$ (12.55)	$ 13.02	$ (2.62)	$ 8.34
Refinery operating expenses per throughput barrel [7]	$ 15.96	$ 11.34	$ 12.81	$ 10.40

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Rocky Mountain Region (Cheyenne and Woods Cross Refineries) [8]				
Feedstocks:				
Sweet crude oil	38 %	38 %	36 %	36 %
Heavy sour crude oil	19 %	30 %	33 %	33 %
Black wax crude oil	30 %	23 %	22 %	23 %
Other feedstocks and blends	13 %	9 %	9 %	8 %
Total	100 %	100 %	100 %	100 %
Sales of produced refined products:				
Gasolines	57 %	54 %	56 %	53 %
Diesel fuels	31 %	32 %	33 %	34 %
Fuel oil	3 %	4 %	3 %	4 %
Asphalt	5 %	5 %	5 %	5 %
LPG and other	4 %	5 %	3 %	4 %
Total	100 %	100 %	100 %	100 %
Consolidated				
Crude charge (BPD) [1]	390,580	476,030	392,170	443,450
Refinery throughput (BPD) [2]	421,100	506,800	423,370	475,400
Sales of produced refined products (BPD) [3]	407,280	485,500	414,140	459,440
Refinery utilization [4]	85.5 %	104.2 %	85.8 %	97.0 %
Average per produced barrel [5]				
Refinery gross margin	$ 4.93	$ 17.23	$ 8.33	$ 16.69
Refinery operating expenses [6]	6.83	6.20	6.65	6.33
Net operating margin	$ (1.90)	$ 11.03	$ 1.68	$ 10.36
Refinery operating expenses per throughput barrel [7]	$ 6.61	$ 5.94	$ 6.50	$ 6.12
Feedstocks:				
Sweet crude oil	50 %	47 %	46 %	44 %
Sour crude oil	27 %	29 %	27 %	30 %
Heavy sour crude oil	12 %	14 %	16 %	15 %
Black wax crude oil	4 %	4 %	4 %	4 %
Other feedstocks and blends	7 %	6 %	7 %	7 %
Total	100 %	100 %	100 %	100 %
Sales of produced refined products:				
Gasolines	54 %	50 %	54 %	51 %
Diesel fuels	34 %	35 %	34 %	35 %
Jet fuels	2 %	4 %	2 %	4 %
Fuel oil	1 %	2 %	1 %	2 %
Asphalt	4 %	4 %	4 %	4 %
Base oils	3 %	2 %	2 %	2 %
LPG and other	2 %	3 %	3 %	2 %
Total	100 %	100 %	100 %	100 %

(1) Crude charge represents the barrels per day of crude oil processed at our refineries.
(2) Refinery throughput represents the barrels per day of crude and other refinery feedstocks input to the crude units and other conversion units at our refineries.
(3) Represents barrels sold of refined products produced at our refineries (including HFC Asphalt) and does not include volumes of refined products purchased for resale or volumes of excess crude oil sold.
(4) Represents crude charge divided by total crude capacity (BPSD). Our consolidated crude capacity is 457,000 BPSD.
(5) Represents average amount per produced barrel sold, which is a non-GAAP measure. Reconciliations to amounts reported under GAAP are provided under "Reconciliations to Amounts Reported Under Generally Accepted Accounting Principles" following Item 3 of Part I of this Form 10-Q.
(6) Represents total refining segment operating expenses, exclusive of depreciation and amortization, divided by sales volumes of refined products produced at our refineries.
(7) Represents total refining segment operating expenses, exclusive of depreciation and amortization, divided by refinery throughput.

(8) As previously disclosed, our Cheyenne Refinery ceased petroleum refining operations in the third quarter of 2020. Beginning with the fourth quarter of 2020, activities associated with the conversion of our Cheyenne Refinery to renewable diesel production will be reported in the Corporate and Other segment, and the disaggregation of our refining geographic operating data will be presented in two regions, Mid-Continent and West, to best reflect the economic drivers of our refining operations. The Mid-Continent region will continue to be comprised of our El Dorado and Tulsa Refineries, and the new West region will be comprised of our Navajo and Woods Cross Refineries.

Lubricants and Specialty Products Operating Data

The following table sets forth information about our lubricants and specialty products operations. For the nine months ended September 30, 2019, our lubricants and specialty products operating results reflect the operations of our Sonneborn business for the period February 1, 2019 (date of acquisition) through September 30, 2019.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Lubricants and Specialty Products				
Throughput (BPD)	19,020	23,190	19,050	19,920
Sales of produced refined products (BPD)	33,560	36,160	32,460	34,740
Sales of produced refined products:				
Finished products	50 %	50 %	51 %	50 %
Base oils	27 %	24 %	24 %	27 %
Other	23 %	26 %	25 %	23 %
Total	100 %	100 %	100 %	100 %

Supplemental financial data attributable to our Lubricants and Specialty Products segment is presented below.

	Rack Back [1]	Rack Forward [2]	Eliminations [3]	Total Lubricants and Specialty Products
	(In thousands)			
Three months ended September 30, 2020				
Sales and other revenues	$ 110,952	$ 423,418	$ (79,328)	$ 455,042
Cost of products sold	$ 98,033	$ 283,998	$ (79,328)	$ 302,703
Operating expenses	$ 25,400	$ 29,088	$ —	$ 54,488
Selling, general and administrative expenses	$ 5,616	$ 31,157	$ —	$ 36,773
Depreciation and amortization	$ 5,419	$ 12,013	$ —	$ 17,432
Income (loss) from operations	$ (23,516)	$ 67,162	$ —	$ 43,646
Three months ended September 30, 2019				
Sales and other revenues	$ 196,355	$ 477,261	$ (135,898)	$ 537,718
Cost of products sold	$ 175,976	$ 357,848	$ (135,898)	$ 397,926
Operating expenses	$ 27,825	$ 30,149	$ —	$ 57,974
Selling, general and administrative expenses	$ 5,862	$ 38,013	$ —	$ 43,875
Depreciation and amortization	$ 11,390	$ 11,310	$ —	$ 22,700
Income (loss) from operations	$ (24,698)	$ 39,941	$ —	$ 15,243

	Rack Back [1]	Rack Forward [2]	Eliminations [3]	Total Lubricants and Specialty Products
	(In thousands)			
Nine months ended September 30, 2020				
Sales and other revenues	$ 361,638	$ 1,241,402	$ (264,108)	$ 1,338,932
Cost of products sold	$ 345,843	$ 870,695	$ (264,108)	$ 952,430
Operating expenses	$ 69,703	$ 86,756	$ —	$ 156,459
Selling, general and administrative expenses	$ 16,596	$ 105,058	$ —	$ 121,654
Depreciation and amortization	$ 22,163	$ 37,097	$ —	$ 59,260
Long-lived asset impairment	$ 167,017	$ 37,691	$ —	$ 204,708
Income (loss) from operations	$ (259,684)	$ 104,105	$ —	$ (155,579)
Nine months ended September 30, 2019				
Sales and other revenues	$ 486,035	$ 1,428,786	$ (338,423)	$ 1,576,398
Cost of products sold	$ 453,519	$ 1,087,200	$ (338,423)	$ 1,202,296
Operating expenses	$ 87,970	$ 82,685	$ —	$ 170,655
Selling, general and administrative expenses	$ 25,707	$ 99,974	$ —	$ 125,681
Depreciation and amortization	$ 32,991	$ 32,900	$ —	$ 65,891
Goodwill impairment [4]	$ 152,712	$ —	$ —	$ 152,712
Income (loss) from operations	$ (266,864)	$ 126,027	$ —	$ (140,837)

(1) Rack back consists of our PCLI base oil production activities, by-product sales to third parties and intra-segment base oil sales to rack forward.

(2) Rack forward activities include the purchase of base oils from rack back and the blending, packaging, marketing and distribution and sales of finished lubricants and specialty products to third parties.

(3) Intra-segment sales of rack back produced base oils to rack forward are eliminated under the "Eliminations" column.

(4) During the three months ended June 30, 2019, a goodwill impairment charge of $152.7 million was recorded in the PCLI reporting unit within the Lubricants and Specialty Products segment. We separately allocated this goodwill impairment charge for purposes of management's discussion and analysis presentation of Rack Back and Rack Forward results entirely to Rack Back.

Results of Operations – Three Months Ended September 30, 2020 Compared to Three Months Ended September 30, 2019

Summary

Net loss attributable to HollyFrontier stockholders for the three months ended September 30, 2020 was $(2.4) million ($(0.01) per basic and diluted share), a $264.2 million decrease compared to net income of $261.8 million ($1.60 per basic and $1.58 per diluted share) for the three months ended September 30, 2019. Net income decreased due principally to lower gross refining margins and lower refining segment sales volumes. For the three months ended September 30, 2020, lower of cost or market inventory reserve adjustments increased pre-tax earnings by $62.8 million compared to a decrease to pre-tax earnings of $34.1 million for the three months ended September 30, 2019. Refinery gross margins for the three months ended September 30, 2020 decreased to $4.93 per barrel sold from $17.23 for the three months ended September 30, 2019. The three months ended September 30, 2020 included an $81.0 million gain recognized upon the settlement of a business interruption insurance claim. During the three months ended September 30, 2019, our Cheyenne Refinery and Woods Cross Refinery were each granted a one-year small refinery exemption from the EPA for the 2018 calendar year, at which time we recorded a total $36.6 million reduction to cost of products sold.

Sales and Other Revenues

Sales and other revenues decreased 36% from $4,424.8 million for the three months ended September 30, 2019 to $2,819.4 million for the three months ended September 30, 2020 due to a year-over-year decrease in third quarter sales prices and lower refined product sales volumes. Sales and other revenues for the three months ended September 30, 2020 and 2019 included $26.7 million and $29.9 million, respectively, in HEP revenues attributable to pipeline and transportation services provided to unaffiliated parties. Additionally, sales and other revenues included $452.9 million and $529.6 million in unaffiliated revenues related to our Lubricants and Specialty Products segment for the three months ended September 30, 2020 and 2019, respectively.

Cost of Products Sold
Total cost of products sold decreased 33% from $3,437.8 million for the three months ended September 30, 2019 to $2,314.4 million for the three months ended September 30, 2020 due principally to lower crude oil costs and lower refined product sales volumes. Additionally, during the third quarter of 2020, we recognized a lower of cost or market inventory valuation adjustment benefit of $62.8 million compared to a charge of $34.1 million for the same period of 2019, resulting in a new $468.1 million inventory lower of cost or market reserve at September 30, 2020. The lower of cost or market reserve at September 30, 2020 is based on market conditions and prices at that time. During the third quarter of 2019, we recorded a $36.6 million RINs cost reduction as a result of our Cheyenne Refinery and Woods Cross Refinery small refinery exemptions.

Gross Refinery Margins
Gross refinery margin per barrel sold decreased 71% from $17.23 for the three months ended September 30, 2019 to $4.93 for the three months ended September 30, 2020. This was due to the effects of a decrease in the average per barrel sold sales price during the third quarter of 2020, partially offset by decreased crude oil and feedstock prices. Gross refinery margin per barrel does not include the non-cash effects of lower of cost or market inventory valuation adjustments or depreciation and amortization. See “Reconciliations to Amounts Reported Under Generally Accepted Accounting Principles” following Item 3 of Part I of this Form 10-Q for a reconciliation to the income statement of sale prices of products sold and cost of products purchased.

Operating Expenses
Operating expenses, exclusive of depreciation and amortization, decreased 4% from $345.6 million for the three months ended September 30, 2019 to $332.5 million for the three months ended September 30, 2020 due principally to lower repair and maintenance costs compared to the third quarter of 2019, partially offset by decommissioning costs for our Cheyenne Refinery recorded in the three months ended September 30, 2020.

Selling, General and Administrative Expenses
Selling, general and administrative expenses decreased 15% from $87.6 million for the three months ended September 30, 2019 to $74.5 million for the three months ended September 30, 2020 due principally to lower incentive compensation costs and employee travel-related expenses. We incurred $0.1 million and $3.9 million in direct acquisition and integration costs for our Sonneborn business during the three months ended September 30, 2020 and 2019, respectively.

Depreciation and Amortization Expenses
Depreciation and amortization decreased 1% from $127.0 million for the three months ended September 30, 2019 to $125.3 million for the three months ended September 30, 2020. This decrease was due principally to lower depreciation expense resulting from the assets impaired in the second quarter of 2020, offset by depreciation and amortization attributable to capitalized improvement projects and capitalized refinery turnaround costs.

Interest Income
Interest income for the three months ended September 30, 2020 was $1.0 million compared to $6.2 million for the three months ended September 30, 2019. This decrease was primarily due to lower interest rates on cash investments during the current year quarter.

Interest Expense
Interest expense was $30.6 million for the three months ended September 30, 2020 compared to $36.0 million for the three months ended September 30, 2019. This decrease was primarily due to lower market interest rates on HEP’s credit facility and HEP’s refinancing of its 6.0% senior notes due 2024, partially offset by an unrealized loss on the mark-to-market change of the fair value of the embedded derivative in our catalyst financing arrangements during the current year quarter. For the three months ended September 30, 2020 and 2019, interest expense included $12.5 million and $18.8 million, respectively, in interest costs attributable to HEP operations.

Gain on Business Interruption Insurance Settlement
During the third quarter of 2020, we recorded a gain of $81.0 million upon the settlement of our business interruption claim with our insurance carrier related to a loss at our Woods Cross Refinery that occurred in the first quarter of 2018.

Gain (Loss) on Foreign Currency Transactions
Remeasurement adjustments resulting from the foreign currency conversion of the intercompany financing notes payable by PCLI net of mark-to-market valuations on foreign exchange forward contracts with banks which hedge the foreign currency exposure on these intercompany notes were net gains of $1.0 million and $0.4 million for the three months ended September 30, 2020 and 2019, respectively. For the three months ended September 30, 2020 and 2019, gain on foreign currency transactions included a loss of $8.2 million and a gain of $5.7 million, respectively, on foreign exchange forward contracts (utilized as an economic hedge).

Income Taxes
For the three months ended September 30, 2020, we recorded an income tax expense of $4.6 million compared to $103.0 million for the three months ended September 30, 2019. This decrease was due principally to the decrease in pre-tax earnings during the three months ended September 30, 2020 compared to pre-tax earnings in the same period of 2019. Our effective tax rates were 16.4% and 25.7% for the three months ended September 30, 2020 and 2019, respectively. The year-over-year decrease in the effective tax rate is due principally to the relationship between the pre-tax results and the earnings attributable to the noncontrolling interest that is not included in income for tax purposes.

Results of Operations – Nine Months Ended September 30, 2020 Compared to Nine Months Ended September 30, 2019

Summary
Net loss attributable to HollyFrontier stockholders for the nine months ended September 30, 2020 was $(483.7) million ($(2.99) per basic and diluted share), a $1,195.5 million decrease compared to net income of $711.8 million ($4.23 per basic and $4.20 per diluted share) for the nine months ended September 30, 2019. Net income decreased due principally to long-lived asset impairment charges of $436.9 million, lower gross refining margins and lower refining segment sales volumes. For the nine months ended September 30, 2020, lower of cost or market inventory reserve adjustments decreased pre-tax earnings by $227.7 million compared to an increase to pre-tax earnings of $150.5 million for the nine months ended September 30, 2019. Refinery gross margins for the nine months ended September 30, 2020 decreased to $8.33 per barrel sold from $16.69 for the nine months ended September 30, 2019. The nine months ended September 30, 2020 included an $81.0 million gain recognized upon the settlement of a business interruption insurance claim. The nine months ended September 30, 2019 included a goodwill impairment charge of $152.7 million. Also, during the nine months ended September 30, 2019, our Cheyenne Refinery and Woods Cross Refinery were each granted a one-year small refinery exemption from the EPA for the 2018 calendar year, at which time we recorded a total $36.6 million reduction to cost of products sold.

Sales and Other Revenues
Sales and other revenues decreased 37% from $13,104.7 million for the nine months ended September 30, 2019 to $8,282.9 million for the nine months ended September 30, 2020 due to a year-over-year decrease in sales prices and lower refined product sales volumes. Sales and other revenues for the nine months ended September 30, 2020 and 2019 include $72.4 million and $89.4 million, respectively, in HEP revenues attributable to pipeline and transportation services provided to unaffiliated parties. Additionally, sales and other revenues included $1,330.0 million and $1,568.2 million in unaffiliated revenues related to our Lubricants and Specialty Products segment for the nine months ended September 30, 2020 and 2019, respectively.

Cost of Products Sold
Total cost of products sold decreased 32% from $10,157.4 million for the nine months ended September 30, 2019 to $6,875.7 million for the nine months ended September 30, 2020 due principally to lower crude oil costs and lower refined product sales volumes. Additionally, we recognized a lower of cost or market inventory valuation charge of $227.7 million for the nine months ended September 30, 2020 compared to a benefit of $150.5 million for the same period of 2019, resulting in a new $468.1 million lower of cost or market reserve at September 30, 2020. The lower of cost or market reserve at September 30, 2020 is based on market conditions and prices at that time. During the nine months ended September 30, 2019, we recorded a $36.6 million RINs cost reduction as a result of our Cheyenne Refinery and Woods Cross Refinery small refinery exemptions.

Gross Refinery Margins
Gross refinery margin per barrel sold decreased 50% from $16.69 for the nine months ended September 30, 2019 to $8.33 for the nine months ended September 30, 2020. This was due to the effects of a decrease in the average per barrel sold sales price during the current year-to-date period, partially offset by decreased crude oil and feedstock prices. Gross refinery margin per barrel does not include the non-cash effects of lower of cost or market inventory valuation adjustments or depreciation and amortization. See “Reconciliations to Amounts Reported Under Generally Accepted Accounting Principles” following Item 3 of Part I of this Form 10-Q for a reconciliation to the income statement of sales prices of products sold and cost of products purchased.

Operating Expenses
Operating expenses, exclusive of depreciation and amortization, decreased 5% from $1,010.4 million for the nine months ended September 30, 2019 to $964.2 million for the nine months ended September 30, 2020 due principally to lower repair and maintenance costs compared to nine months ended September 30, 2019, partially offset by decommissioning costs for our Cheyenne Refinery recorded in the nine months ended September 30, 2020. Prior year period operating expenses included higher repair and maintenance costs related to a February 2019 fire in an FCC unit at our El Dorado Refinery.

Selling, General and Administrative Expenses
Selling, general and administrative expenses decreased 9% from $261.0 million for the nine months ended September 30, 2019 to $237.6 million for the nine months ended September 30, 2020 due principally to lower incentive compensation costs and employee travel-related expenses. We incurred $2.0 million and $20.1 million in direct acquisition and integration costs for our Sonneborn business during the nine months ended September 30, 2020 and 2019, respectively.

Depreciation and Amortization Expenses
Depreciation and amortization increased 6% from $375.3 million for the nine months ended September 30, 2019 to $396.0 million for the nine months ended September 30, 2020. This increase was due principally to depreciation and amortization attributable to capitalized improvement projects and capitalized refinery turnaround costs, partially offset by lower depreciation expense resulting from the assets impaired in the current year-to-date period.

Long-lived Asset and Goodwill Impairments
During the nine months ended September 30, 2020, we recorded long-lived asset impairment charges of $232.2 million that related to our Cheyenne Refinery and $204.7 million related to PCLI. During the nine months ended September 30, 2019, we recorded a goodwill impairment charge of $152.7 million that related to PCLI. See Note 1 “Description of Business and Presentation of Financial Statements” in the Notes to Consolidated Financial Statements for additional information on these impairments.

Interest Income
Interest income for the nine months ended September 30, 2020 was $6.6 million compared to $17.1 million for the nine months ended September 30, 2019. This decrease was primarily due to lower average cash balances and lower interest rates on cash investments.

Interest Expense
Interest expense was $85.9 million for the nine months ended September 30, 2020 compared to $106.9 million for the nine months ended September 30, 2019. This decrease was primarily due to lower market interest rates on HEP’s credit facility and HEP’s refinancing of its 6.0% senior notes due 2024. Additionally, we recorded an unrealized gain on the mark-to-market change in the fair value of the embedded derivative in our catalyst financing arrangements of $2.5 million for the nine months ended September 30, 2020 compared to an unrealized loss of $3.0 million for the same period in 2019. For the nine months ended September 30, 2020 and 2019, interest expense included $40.7 million and $57.1 million, respectively, in interest costs attributable to HEP operations.

Gain on Business Interruption Insurance Settlement
During the third quarter of 2020, we recorded a gain of $81.0 million upon the settlement of our business interruption claim with our insurance carrier related to a loss at our Woods Cross Refinery that occurred in the first quarter of 2018.

Gain on Sales-type Leases
During the second quarter of 2020, HEP and Delek US Holdings, Inc. renewed the original throughput agreement on specific HEP assets. Portions of the new throughput agreement meet the definition of sales-type leases, which resulted in an accounting gain of $33.8 million upon the initial recognition of the sales-type lease during the nine months ended September 30, 2020.

Loss on Early Extinguishment of Debt
For the nine months ended September 30, 2020, HEP recorded a $25.9 million loss on the redemption of its $500 million aggregate principal amount of 6.0% senior notes maturing August 2024 at a redemption cost of $522.5 million.

Gain (Loss) on Foreign Currency Transactions
Remeasurement adjustments resulting from the foreign currency conversion of the intercompany financing notes payable by PCLI net of mark-to-market valuations on foreign exchange forward contracts with banks which hedge the foreign currency exposure on these intercompany notes were a net loss of $0.9 million for the nine months ended September 30, 2020 compared to a net gain of $4.9 million for the nine months ended September 30, 2019. For the nine months ended September 30, 2020 and 2019, gain / loss on foreign currency transactions included a net gain of $11.0 million and a net loss of $9.0 million, respectively, on foreign exchange forward contracts (utilized as an economic hedge).

Income Taxes
For the nine months ended September 30, 2020, we recorded an income tax benefit of $188.5 million compared to income tax expense of $279.9 million for the nine months ended September 30, 2019. This decrease was due principally to a pre-tax loss during the nine months ended September 30, 2020 compared to pre-tax earnings in the same period of 2019. Our effective tax rates were 31.0% and 26.1% for the nine months ended September 30, 2020 and 2019, respectively. The year-over-year increase in the effective tax rate is due principally to the relationship between the pre-tax results and the earnings attributable to the noncontrolling interest that is not included in income for tax purposes.

LIQUIDITY AND CAPITAL RESOURCES

HollyFrontier Credit Agreement
We have a $1.35 billion senior unsecured revolving credit facility maturing in February 2022 (the “HollyFrontier Credit Agreement”). The HollyFrontier Credit Agreement may be used for revolving credit loans and letters of credit from time to time and is available to fund general corporate purposes. At September 30, 2020, we were in compliance with all covenants, had no outstanding borrowings and had outstanding letters of credit totaling $5.7 million under the HollyFrontier Credit Agreement.

HollyFrontier Senior Notes
On September 28, 2020, we completed a public offering of $350.0 million in aggregate principal amount of 2.625% senior notes maturing October 2023 and $400.0 million in aggregate principal amount of 4.500% senior notes maturing October 2030. We intend to use the net proceeds for general corporate purposes, which may include capital expenditures. These senior notes are unsecured and unsubordinated obligations of ours and rank equally with all our other existing and future unsecured and unsubordinated indebtedness.

HollyFrontier Financing Arrangements
In December 2018, certain of our wholly-owned subsidiaries entered into financing arrangements whereby such subsidiaries sold a portion of their precious metals catalyst to a financial institution and then leased back the precious metals catalyst in exchange for total cash received of $32.5 million. The volume of the precious metals catalyst and the lease rate are fixed over the term of each lease, and the lease payments are recorded as interest expense. The leases mature on February 1, 2021. Upon maturity, we must either satisfy the obligation at fair market value or refinance to extend the maturity.

HEP Credit Agreement
HEP has a $1.4 billion senior secured revolving credit facility maturing in July 2022 (the “HEP Credit Agreement”) and is available to fund capital expenditures, investments, acquisitions, distribution payments, working capital and for general partnership purposes. It is also available to fund letters of credit up to a $50 million sub-limit and has a $300 million accordion. During the nine months ended September 30, 2020, HEP received advances totaling $219.5 million and repaid $237.0 million under the HEP Credit Agreement. At September 30, 2020, HEP was in compliance with all of its covenants, had outstanding borrowings of $948.0 million and no outstanding letters of credit under the HEP Credit Agreement.

HEP Senior Notes
On February 4, 2020, HEP closed a private placement of $500.0 million in aggregate principal amount of 5.0% HEP senior unsecured notes maturing February 2028. On February 5, 2020, HEP redeemed its existing $500.0 million aggregate principal amount of 6.0% senior notes maturing August 2024 at a redemption cost of $522.5 million. HEP recognized a $25.9 million early extinguishment loss consisting of a $22.5 million debt redemption premium and unamortized discount and financing costs of $3.4 million. HEP funded the $522.5 million redemption with proceeds from the issuance of its 5.0% senior notes and borrowings under the HEP Credit Agreement.

See Note 9 “Debt” in the Notes to Consolidated Financial Statements for additional information on our debt instruments.

HEP Common Unit Continuous Offering Program

In May 2016, HEP established a continuous offering program under which HEP may issue and sell common units from time to time, representing limited partner interests, up to an aggregate gross sales amount of $200 million. During the nine months ended September 30, 2020, HEP did not issue any common units under this program. As of September 30, 2020, HEP has issued 2,413,153 units under this program, providing $82.3 million in gross proceeds.

Liquidity

We believe our current cash and cash equivalents, along with future internally generated cash flow and funds available under our credit facilities, will provide sufficient resources to fund currently planned capital projects and our liquidity needs for the foreseeable future. We expect that, to the extent necessary, we can raise additional funds from time to time through equity or debt financings in the public and private capital markets. In addition, subject to our current cash conservation strategies as discussed above in “Outlook,” components of our growth strategy include the expansion of existing units at our facilities and selective acquisition of complementary assets for our refining operations intended to increase earnings and cash flow. We also expect to use cash for payment of cash dividends, which are at the discretion of our Board of Directors, and, once commodity prices and demand for products normalize, for the repurchases of our common stock under our share repurchase program.

Our standalone (excluding HEP) liquidity was approximately $2.9 billion at September 30, 2020, consisting of cash and cash equivalents of $1,506.8 million and an undrawn $1.35 billion credit facility maturing in 2022.

We consider all highly-liquid instruments with a maturity of three months or less at the time of purchase to be cash equivalents. Cash equivalents are stated at cost, which approximates market value. These primarily consist of investments in conservative, highly-rated instruments issued by financial institutions, government and corporate entities with strong credit standings and money market funds.

In November 2019, our Board of Directors approved a $1.0 billion share repurchase program, which replaced all existing share repurchase programs, authorizing us to repurchase common stock in the open market or through privately negotiated transactions. The timing and amount of stock repurchases will depend on market conditions and corporate, regulatory and other relevant considerations. This program may be discontinued at any time by the Board of Directors. As of September 30, 2020, we had not repurchased common stock under this stock repurchase program. In addition, we are authorized by our Board of Directors to repurchase shares in an amount sufficient to offset shares issued under our compensation programs. In order to preserve liquidity, we do not intend to repurchase common stock under our $1.0 billion share repurchase program until commodity prices and demand for products normalize.

Cash and cash equivalents increased $639.7 million for the nine months ended September 30, 2020. Net cash provided by operating and financing activities of $391.1 million and $463.2 million, respectively, exceeded net cash used by investing activities of $213.7 million.

Cash Flows – Operating Activities

Nine Months Ended September 30, 2020 Compared to Nine Months Ended September 30, 2019

Net cash flows provided by operating activities were $391.1 million for the nine months ended September 30, 2020 compared to $1,411.4 million for the nine months ended September 30, 2019, a decrease of $1,020.4 million. Net loss for the nine months ended September 30, 2020 of $(420.3) million was a decrease of $1,211.6 million compared to net income of $791.3 million for the nine months ended September 30, 2019. Non-cash adjustments to net income consisting of depreciation and amortization, long-lived asset and goodwill impairments, lower of cost or market inventory valuation adjustment, earnings of equity method investments, inclusive of distributions, loss on early extinguishment of debt, gain on sales-type leases, gain / loss on sale of assets, deferred income taxes, equity-based compensation expense and fair value changes to derivative instruments totaled $923.4 million for the nine months ended September 30, 2020 compared to $531.5 million for the same period in 2019. Adjusted for non-cash items, changes in working capital decreased operating cash flows by $50.0 million and increased operating cash flows by $244.3 million, for the nine months ended September 30, 2020 and 2019, respectively. Additionally, for the nine months ended September 30, 2020, turnaround expenditures decreased to $73.8 million from $152.4 million for the same period of 2019.

Cash Flows – Investing Activities and Planned Capital Expenditures

Nine Months Ended September 30, 2020 Compared to Nine Months Ended September 30, 2019

Net cash flows used for investing activities were $213.7 million for the nine months ended September 30, 2020 compared to $856.8 million for the nine months ended September 30, 2019, a decrease of $643.1 million. Cash expenditures for properties, plants and equipment for the first nine months of 2020 increased to $213.0 million from $195.1 million for the same period in 2019. These include HEP capital expenditures of $38.6 million and $23.8 million for the nine months ended September 30, 2020 and 2019, respectively. Additionally, HEP invested $2.4 million in the Cushing Connect Pipeline & Terminal LLC joint venture. Prior year investing activities reflected a net cash outflow of $662.7 million upon the acquisition of Sonneborn.

Planned Capital Expenditures

HollyFrontier Corporation

Each year our Board of Directors approves our annual capital budget, which includes specific projects that management is authorized to undertake. Additionally, when conditions warrant or as new opportunities arise, additional projects may be approved. The funds appropriated for a particular capital project may be expended over a period of several years, depending on the time required to complete the project. Therefore, our planned capital expenditures for a given year consist of expenditures appropriated in that year's capital budget plus expenditures for projects appropriated in prior years which have not yet been completed. Refinery turnaround spending is amortized over the useful life of the turnaround.

The refining industry is capital intensive and requires on-going investments to sustain our refining operations. This includes replacement of, or rebuilding, refinery units and components that extend the useful life. We also invest in projects that improve operational reliability and profitability via enhancements that improve refinery processing capabilities as well as production yield and flexibility. Our capital expenditures also include projects related to environmental, health and safety compliance and include initiatives as a result of federal and state mandates.

Our refinery operations and related emissions are highly regulated at both federal and state levels, and we invest in our facilities as needed to remain in compliance with these standards. Additionally, when faced with new emissions or fuels standards, we seek to execute projects that facilitate compliance and also improve the operating costs and / or yields of associated refining processes.

HEP

Each year the Holly Logistic Services, L.L.C. board of directors approves HEP's annual capital budget, which specifies capital projects that HEP management is authorized to undertake. Additionally, at times when conditions warrant or as new opportunities arise, special projects may be approved. The funds allocated for a particular capital project may be expended over a period in excess of a year, depending on the time required to complete the project. Therefore, HEP's planned capital expenditures for a given year consist of expenditures approved for capital projects included in its current year capital budget as well as, in certain cases, expenditures approved for capital projects in capital budgets for prior years. HEP expects the majority of the expansion capital budget in 2020 to be invested in the Cushing Connect joint venture. In addition, HEP may spend funds periodically to perform capital upgrades or additions to its assets where a customer reimburses HEP for such costs. The upgrades or additions would generally benefit the customer over the remaining life of the related service agreements.

Due to the COVID-19 pandemic and resulting decline in U.S. and global economic activities, we have reduced our 2020 expected total consolidated capital expenditures by approximately 25% from our approved annual capital budget. Expected capital and turnaround cash spending for 2020 is as follows:

	Expected Cash Spending Range	
	(In millions)	
HollyFrontier Capital Expenditures		
Refining	$ 187.0	$ 212.0
Renewable Diesel Unit	130.0	145.0
Lubricants and Specialty Products	30.0	35.0
Turnarounds and catalyst	85.0	100.0
Total HollyFrontier	432.0	492.0
HEP		
Maintenance	8.0	12.0
Expansion and joint venture investment	35.0	45.0
Refining unit turnarounds	—	1.0
Total HEP	43.0	58.0
Total	$ 475.0	$ 550.0

Cash Flows – Financing Activities

Nine Months Ended September 30, 2020 Compared to Nine Months Ended September 30, 2019

Net cash flows provided by financing activities were $463.2 million for the nine months ended September 30, 2020 compared to net cash flows used for financing activities of $729.3 million for the nine months ended September 30, 2019, an increase of $1,192.5 million. During the nine months ended September 30, 2020, we received $744.1 million in net proceeds from the issuance of HFC's 2.625% and 4.500% senior notes, purchased $3.4 million of treasury stock and paid $171.6 million in dividends. Also during this period, HEP received $219.5 million and repaid $237.0 million under the HEP Credit Agreement, paid $522.5 million upon the redemption of HEP's 6.0% senior notes and received $491.3 million in net proceeds from the issuance of HEP 5.0% senior notes, paid distributions of $70.9 million to noncontrolling interests and received contributions from noncontrolling interests of $15.4 million. During the nine months ended September 30, 2019, we purchased $472.0 million of treasury stock and paid $168.0 million in dividends. Also during this period, HEP received $269.5 million and repaid $257.0 million under the HEP Credit Agreement and paid distributions of $100.1 million to noncontrolling interests.

Contractual Obligations and Commitments

HollyFrontier Corporation

In September 2020, we issued $350.0 million in aggregate principal amount of 2.625% senior notes maturing October 2023 and $400.0 million in aggregate principal amount of 4.500% senior notes maturing October 2030.

There were no other significant changes to our long-term contractual obligations during the nine months ended September 30, 2020.

HEP

In February 2020, HEP issued $500.0 million in aggregate principal amount of 5.0% HEP senior notes maturing February 2028 and redeemed its existing $500.0 million 6.0% senior notes maturing August 2024.

During the nine months ended September 30, 2020, HEP had net repayments of $17.5 million resulting in $948.0 million of outstanding borrowings under the HEP Credit Agreement at September 30, 2020.

There were no other significant changes to HEP's long-term contractual obligations during this period.

CRITICAL ACCOUNTING POLICIES

Our discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities as of the date of the financial statements. Actual results may differ from these estimates under different assumptions or conditions.

Our significant accounting policies are described in "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations – Critical Accounting Policies" in our Annual Report on Form 10-K for the year ended December 31, 2019. Certain critical accounting policies that materially affect the amounts recorded in our consolidated financial statements include the use of the last-in, first-out ("LIFO") method of valuing certain inventories, assessing the possible impairment of certain long-lived assets and goodwill, and assessing contingent liabilities for probable losses.

Inventory Valuation: Inventories related to our refining operations are stated at the lower of cost, using the LIFO method for crude oil and unfinished and finished refined products, or market. In periods of rapidly declining prices, LIFO inventories may have to be written down to market value due to the higher costs assigned to LIFO layers in prior periods. In addition, the use of the LIFO inventory method may result in increases or decreases to cost of sales in years that inventory volumes decline as the result of charging cost of sales with LIFO inventory costs generated in prior periods. An actual valuation of inventory under the LIFO method is made at the end of each year based on the inventory levels at that time. Accordingly, interim LIFO calculations are based on management's estimates of expected year-end inventory levels and are subject to the final year-end LIFO inventory valuation.

At September 30, 2020, our lower of cost or market inventory valuation reserve was $468.1 million. This amount, or a portion thereof, is subject to reversal as a reduction to cost of products sold in subsequent periods as inventories giving rise to the reserve are sold, and a new reserve is established.

Inventories consisting of process chemicals, materials and maintenance supplies and RINs are stated at the lower of weighted-average cost or net realizable value. Inventories of our Petro-Canada Lubricants and Sonneborn businesses are stated at the lower of cost, using the FIFO method, or net realizable value.

Goodwill and Long-lived Assets: As of September 30, 2020, our goodwill balance was $2.4 billion, with goodwill assigned to our Refining, Lubricants and Specialty Products and HEP segments of $1,733.5 million, $328.6 million and $312.9 million, respectively. Goodwill represents the excess of the cost of an acquired entity over the fair value of the assets acquired and liabilities assumed. Goodwill is not subject to amortization and is tested annually or more frequently if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. Our goodwill impairment testing first entails either a quantitative assessment or an optional qualitative assessment to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If we determine that based on the qualitative factors that it is more likely than not that the fair value of the reporting unit is greater than its carrying amount, a quantitative test is performed in which we estimate the fair value of the related reporting unit. If the carrying amount of a reporting unit exceeds its fair value, the goodwill of that reporting unit is impaired, and we measure goodwill impairment as the excess of the carrying amount of reporting unit over the related fair value.

For purposes of long-lived asset impairment evaluation, we have grouped our long-lived assets as follows: (i) our refinery asset groups, which include certain HEP logistics assets, (ii) our Lubricants and Specialty Products asset groups and (iii) our HEP asset groups, which comprises HEP assets not included in our refinery asset groups. These asset groups represent the lowest level for which independent cash flows can be identified. Our long-lived assets are evaluated for impairment by identifying whether indicators of impairment exist and if so, assessing whether the long-lived assets are recoverable from estimated future undiscounted cash flows. The actual amount of impairment loss measured, if any, is equal to the amount by which the asset group's carrying value exceeds its fair value.

Goodwill and long-lived asset impairments

Due to the economic slowdown caused by the COVID-19 pandemic, we determined that indicators of potential long-lived asset impairments were present in the second quarter of 2020. As a result of our long-lived asset impairment testing, we determined that the carrying value of the long-lived assets of our Cheyenne Refinery and PCLI asset groups were not recoverable, and thus recorded long-lived asset impairment charges of $232.2 million and $204.7 million, respectively, in the second quarter of 2020. Our testing did not result in any other impairments of long-lived assets in the second quarter. There were no additional indicators of long-lived asset impairment present in the third quarter of 2020.

Due to the economic slowdown caused by the COVID-19 pandemic and a decrease in our market capitalization, we determined that indicators of potential goodwill impairment for our Refining and Lubricants and Specialty Products reporting units were present in the second quarter of 2020. As such, we performed an interim test for goodwill impairment as of May 31, 2020. Our interim goodwill impairment testing indicated that there was no impairment of goodwill at our Refining and Lubricants and Specialty Products reporting units as of May 31, 2020.

We performed our annual goodwill impairment testing quantitatively as of July 1, 2020 and determined there was no impairment of goodwill attributable to our reporting units. The excess of the fair values of the reporting units over their respective carrying values ranged from 10% to 229%. Increasing the discount rate by 1.0% or reducing the terminal cash flow growth rate by 1.0% would not have changed the results of our interim or annual goodwill impairment testing.

In performing our impairment tests of goodwill and long-lived assets we developed cash flow forecasts for each of our reporting units and asset groups. Significant judgment is involved in performing these fair value estimates since the results are based on forecasted financial information. The cash flow forecasts include significant assumptions such as planned utilization, end-user demand, selling prices, gross margins, operating costs and capital expenditures. Another key assumption applied to these forecasts to determine the fair value of a reporting unit or an asset group is the discount rate. The discount rate is intended to reflect the weighted average cost of capital for a market participant and the risks associated with the realization of the estimated future cash flows. Assumptions about the effects of the COVID-19 pandemic on future demand and market conditions are inherently subjective and difficult to forecast. Our fair value estimates are based on projected cash flows, which we believe to be reasonable.

A reasonable expectation exists that further deterioration in our operating results or overall economic conditions could result in an impairment of goodwill and / or additional long-lived asset impairments at some point in the future. Future impairment charges could be material to our results of operations and financial condition.

Contingencies

We are subject to proceedings, lawsuits and other claims related to environmental, labor, product and other matters. We are required to assess the likelihood of any adverse judgments or outcomes to these matters as well as potential ranges of probable losses. A determination of the amount of reserves required, if any, for these contingencies is made after careful analysis of each individual issue. The required reserves may change in the future due to new developments in each matter or changes in approach such as a change in settlement strategy in dealing with these matters.

RISK MANAGEMENT

We use certain strategies to reduce some commodity price and operational risks. We do not attempt to eliminate all market risk exposures when we believe that the exposure relating to such risk would not be significant to our future earnings, financial position, capital resources or liquidity or that the cost of eliminating the exposure would outweigh the benefit.

Commodity Price Risk Management

Our primary market risk is commodity price risk. We are exposed to market risks related to the volatility in crude oil and refined products, as well as volatility in the price of natural gas used in our refining operations. We periodically enter into derivative contracts in the form of commodity price swaps, forward purchase and sales and futures contracts to mitigate price exposure with respect to our inventory positions, natural gas purchases, sales prices of refined products and crude oil costs.

Foreign Currency Risk Management

We are exposed to market risk related to the volatility in foreign currency exchange rates. We periodically enter into derivative contracts in the form of foreign exchange forward and foreign exchange swap contracts to mitigate the exposure associated with fluctuations on intercompany notes with our foreign subsidiaries that are not denominated in the U.S. dollar.

As of September 30, 2020, we have the following notional contract volumes related to all outstanding derivative instruments used to mitigate commodity price and foreign currency risk:

Derivative Instrument	Total Outstanding Notional	Notional Contract Volumes by Year of Maturity		Unit of Measure
		2020	2021	
Natural gas price swaps - long	2,250,000	450,000	1,800,000	MMBTU
Crude oil price swaps (basis spread) - long	1,564,000	1,564,000	—	Barrels
WTI and gasoline crack spread swaps - short	100,000	100,000	—	Barrels
NYMEX futures (WTI) - short	1,045,000	830,000	215,000	Barrels
Forward gasoline and diesel contracts - long	200,000	200,000	—	Barrels
Foreign currency forward contracts	419,278,042	106,910,645	312,367,397	U.S. dollar
Forward commodity contracts (platinum) (1)	40,867	—	40,867	Troy ounces

(1) Represents an embedded derivative within our catalyst financing arrangements, which may be refinanced or require repayment under certain conditions. See Note 9 "Debt" in the Notes to Consolidated Financial Statements for additional information on these financing arrangements.

The following sensitivity analysis provides the hypothetical effects of market price fluctuations to the commodity positions hedged under our derivative contracts:

Commodity-based Derivative Contracts	Estimated Change in Fair Value at September 30, 2020	2019
	(In thousands)	
Hypothetical 10% change in underlying commodity prices	$ 3,659	$ 8,432

Interest Rate Risk Management

The market risk inherent in our fixed-rate debt is the potential change arising from increases or decreases in interest rates as discussed below.

For the fixed rate HollyFrontier Senior Notes and HEP Senior Notes, changes in interest rates will generally affect fair value of the debt, but not earnings or cash flows. The outstanding principal, estimated fair value and estimated change in fair value (assuming a hypothetical 10% change in the yield-to-maturity rates) for this debt as of September 30, 2020 is presented below:

	Outstanding Principal	Estimated Fair Value	Estimated Change in Fair Value
		(In thousands)	
HollyFrontier Senior Notes	$ 1,750,000	$ 1,835,996	$ 38,225
HEP Senior Notes	$ 500,000	$ 490,155	$ 16,094

For the variable rate HEP Credit Agreement, changes in interest rates would affect cash flows, but not the fair value. At September 30, 2020, outstanding borrowings under the HEP Credit Agreement were $948.0 million. A hypothetical 10% change in interest rates applicable to the HEP Credit Agreement would not materially affect cash flows.

Our operations are subject to hazards of petroleum processing operations, including fire, explosion and weather-related perils. We maintain various insurance coverages, including business interruption insurance, subject to certain deductibles. We are not fully insured against certain risks because such risks are not fully insurable, coverage is unavailable, or premium costs, in our judgment, do not justify such expenditures.

Financial information is reviewed on the counterparties in order to review and monitor their financial stability and assess their ongoing ability to honor their commitments under the derivative contracts. We have not experienced, nor do we expect to experience, any difficulty in the counterparties honoring their commitments.

We have a risk management oversight committee consisting of members from our senior management. This committee oversees our risk enterprise program, monitors our risk environment and provides direction for activities to mitigate identified risks that may adversely affect the achievement of our goals.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

See "Risk Management" under "Management's Discussion and Analysis of Financial Condition and Results of Operations."

Reconciliations to Amounts Reported Under Generally Accepted Accounting Principles

Reconciliations of earnings before interest, taxes, depreciation and amortization ("EBITDA") to amounts reported under generally accepted accounting principles in financial statements.

Earnings before interest, taxes, depreciation and amortization, which we refer to as EBITDA, is calculated as net income (loss) attributable to HollyFrontier stockholders plus (i) interest expense, net of interest income, (ii) income tax provision, and (iii) depreciation and amortization. EBITDA is not a calculation provided for under GAAP; however, the amounts included in the EBITDA calculation are derived from amounts included in our consolidated financial statements. EBITDA should not be considered as an alternative to net income or operating income as an indication of our operating performance or as an alternative to operating cash flow as a measure of liquidity. EBITDA is not necessarily comparable to similarly titled measures of other companies. EBITDA is presented here because it is a widely used financial indicator used by investors and analysts to measure performance. EBITDA is also used by our management for internal analysis and as a basis for financial covenants.

Set forth below is our calculation of EBITDA.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
	(In thousands)			
Net income (loss) attributable to HollyFrontier stockholders	$ (2,401)	$ 261,813	$ (483,701)	$ 711,783
Add interest expense	30,589	36,027	85,923	106,938
Subtract interest income	(1,011)	(6,164)	(6,590)	(17,127)
Add income tax expense (benefit)	4,573	103,021	(188,504)	279,862
Add depreciation and amortization	125,280	127,016	396,033	375,345
EBITDA	$ 157,030	$ 521,713	$ (196,839)	$ 1,456,801

Reconciliations of refinery operating information (non-GAAP performance measures) to amounts reported under generally accepted accounting principles in financial statements.

Refinery gross margin and net operating margin are non-GAAP performance measures that are used by our management and others to compare our refining performance to that of other companies in our industry. We believe these margin measures are helpful to investors in evaluating our refining performance on a relative and absolute basis. Refinery gross margin per produced barrel sold is total refining segment revenues less total refining segment cost of products sold, exclusive of lower of cost or market inventory valuation adjustments, divided by sales volumes of produced refined products sold. Net operating margin per barrel sold is the difference between refinery gross margin and refinery operating expenses per produced barrel sold. These two margins do not include the non-cash effects of long-lived asset impairment charges, lower of cost or market inventory valuation adjustments or depreciation and amortization. Each of these component performance measures can be reconciled directly to our consolidated statements of income. Other companies in our industry may not calculate these performance measures in the same manner.

Below are reconciliations to our consolidated statements of income for refinery net operating and gross margin and operating expenses, in each case averaged per produced barrel sold. Due to rounding of reported numbers, some amounts may not calculate exactly.

Reconciliation of average refining segment net operating margin per produced barrel sold to refinery gross margin to total sales and other revenues

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
	(Dollars in thousands, except per barrel amounts)			
Consolidated				
Net operating margin per produced barrel sold	$ (1.90)	$ 11.03	$ 1.68	$ 10.36
Add average refinery operating expenses per produced barrel sold	6.83	6.20	6.65	6.33
Refinery gross margin per produced barrel sold	4.93	17.23	8.33	16.69
Times produced barrels sold (BPD)	407,280	485,500	414,140	459,440
Times number of days in period	92	92	274	273
Refining segment gross margin	184,726	769,595	945,241	2,093,379
Add (subtract) rounding	45	208	(288)	(278)
Total refining segment gross margin	184,771	769,803	944,953	2,093,101
Add refining segment cost of products sold	2,211,342	3,177,167	6,113,530	9,598,539
Refining segment sales and other revenues	2,396,113	3,946,970	7,058,483	11,691,640
Add lubricants and specialty products segment sales and other revenues	455,042	537,718	1,338,932	1,576,398
Add HEP segment sales and other revenues	127,731	135,895	370,392	401,143
Subtract corporate, other and eliminations	(159,486)	(195,755)	(484,932)	(564,491)
Sales and other revenues	$ 2,819,400	$ 4,424,828	$ 8,282,875	$ 13,104,690

Reconciliation of average refining segment operating expenses per produced barrel sold to total operating expenses

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
	(Dollars in thousands, except per barrel amounts)			
Consolidated				
Average refinery operating expenses per produced barrel sold	$ 6.83	$ 6.20	$ 6.65	$ 6.33
Times produced barrels sold (BPD)	407,280	485,500	414,140	459,440
Times number of days in period	92	92	274	273
Refinery operating expenses	255,918	276,929	754,604	793,954
Add (subtract) rounding	161	(60)	8	127
Total refining segment operating expenses	256,079	276,869	754,612	794,081
Add lubricants and specialty products segment operating expenses	54,488	57,974	156,459	170,655
Add HEP segment operating expenses	40,003	44,924	109,721	123,045
Subtract corporate, other and eliminations	(18,074)	(34,189)	(56,592)	(77,359)
Operating expenses (exclusive of depreciation and amortization)	$ 332,496	$ 345,578	$ 964,200	$ 1,010,422

Item 4. Controls and Procedures

Evaluation of disclosure controls and procedures. Our principal executive officer and principal financial officer have evaluated, as required by Rule 13a-15(b) under the Securities Exchange Act of 1934 (the "Exchange Act"), our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e)) under the Exchange Act as of the end of the period covered by this Quarterly Report on Form 10-Q. Our disclosure controls and procedures are designed to provide reasonable assurance that the information we are required to disclose in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure and is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms. Based upon the evaluation, our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of September 30, 2020.

Changes in internal control over financial reporting. There have been no changes in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) that occurred during our last fiscal quarter that have materially affected or are reasonably likely to materially affect our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

In the ordinary course of business, we may become party to legal, regulatory or administrative proceedings or governmental investigations, including environmental and other matters. Damages or penalties may be sought from us in some matters and certain matters may require years to resolve. While the outcome and impact of these proceedings and investigations on us cannot be predicted with certainty, based on advice of counsel and information currently available to us, management believes that the resolution of these proceedings and investigations through settlement or adverse judgment will not either individually or in the aggregate have a material adverse effect on our financial condition, results of operations or cash flows.

The environmental proceedings are reported to comply with SEC regulations which require us to disclose proceedings arising under provisions regulating the discharge of materials into the environment or protecting the environment if we reasonably believe that such proceedings may result in monetary sanctions of $100,000 or more.

Environmental Matters

Cheyenne

HollyFrontier Cheyenne Refining LLC (“HFCR”) has been in discussions with the Wyoming Department of Environmental Quality (“WDEQ”) and the United States Environmental Protection Agency (“EPA”) relating to alleged violations of air quality emission limitations and requirements related to operation of certain refinery units at the Cheyenne Refinery.

Notices of Violations were issued by the WDEQ in late 2016 and 2018. On July 18, 2019, HFCR and WDEQ entered into a consent decree, and on August 9, 2019, HFCR paid penalties in the amount of $117,000 related to alleged violations of air quality limits that occurred during the second quarter of 2016 through the second quarter of 2017. Separately, on October 23, 2019, HFCR received a Notice of Violation from the WDEQ for possible violations of air quality standards during the first and second quarters of 2019. No penalty demand has yet been made by the WDEQ relating to such possible violations. HFCR and WDEQ have been in discussions to resolve WDEQ’s alleged violations of air quality limits that occurred during the third quarter of 2017 through calendar year 2019. Recently, the WDEQ and HFCR agreed that the discussions will also include exceedances that occurred during the first quarter of 2020 through the cessation of petroleum refining operations at the Cheyenne Refinery in the third quarter of 2020.

Separately, on August 19, 2019 and October 30, 2019, HFCR received letters from the EPA providing a preliminary estimate of stipulated penalties related to the alleged violations that occurred during the third quarter of 2017 through the second quarter of 2019, pursuant to HFCR’s federal consent decree. HFCR responded to the EPA preliminary estimate of stipulated penalties related to the alleged violations that occurred during the third quarter of 2017 through calendar year 2018 in a letter dated September 18, 2019, followed by meetings with the EPA and the WDEQ on November 14, 2019 and December 4, 2019, to discuss an appropriate resolution of all alleged violations. HFCR settled the allegations in the EPA's August 19, 2019 and October 30, 2019 letters, and pursuant to a demand letter dated January 9, 2020, HFCR was assessed stipulated penalties totaling $700,000 pursuant to HFCR's federal consent decree. HFCR remitted payment of this amount to resolve the alleged violations.

El Dorado

HollyFrontier El Dorado Refining LLC (“HFEDR”) has been engaged in discussions with, and has responded to document requests from, the EPA, the U.S. Department of Justice (“DOJ”) and the State of Kansas regarding alleged Clean Air Act civil violations relating to flaring devices and other equipment at the refinery. Topics of the discussions included (a) three information requests for activities beginning in January 2009, (b) Risk Management Program compliance issues relating to a November 2014 inspection and subsequent events, (c) a Notice of Violation issued by the EPA in August 2017, and (d) possible late reporting under the Emergency Planning and Community Right-to-Know Act for the release of sulfur dioxide and visible emissions from October 2018.

Some of the foregoing civil investigations resulted from fires that occurred at the El Dorado Refinery in September 2017, October 2018 and March 2019. An employee fatality occurred during the September 2017 event. On May 28, 2020, HFEDR reached a settlement in the form of a proposed consent decree with the EPA, the DOJ, and the State of Kansas regarding the alleged Clean Air Act civil violations relating to flaring devices and other equipment at the refinery, as well as compliance with the Clean Air Act’s Risk Management Program (“RMP”).

The proposed consent decree was lodged with the U.S. District Court for the District of Kansas, and the 30-day public comment period ended on July 18, 2020. On July 27, 2020, the EPA, the DOJ and the State of Kansas filed their Unopposed Motion to enter the Consent Decree with the U.S. District Court for the District of Kansas, and on August 27, 2020, the consent decree was entered by the district judge and became effective. Pursuant to the consent decree, among other terms and conditions, HFEDR is required to complete certain projects, implement protocols regarding the examination of its fired heaters and conduct a third party RMP audit of certain of its processes. In addition, HFEDR is required to pay a civil penalty of $2 million to the United States and $2 million to the State of Kansas in two installments, the first half within 30 days of entry of the consent decree and the second within six months of entry of the consent decree. The initial payment of $1 million each was paid to the EPA on September 18, 2020 and the State of Kansas on September 22, 2020. The consent decree resolves the alleged federal and state civil Clean Air Act liability for penalties and injunctive relief, other than potential civil penalties for RMP violations. Finally, as part of the settlement, a 2009 consent decree applicable to the refinery was terminated.

The Occupational Safety and Health Administration ("OSHA") conducted investigations into both the September 2017 and March 2019 events identified above, and HFEDR settled the OSHA claims related to those investigations in 2018 and 2019, respectively. In April 2019, HFEDR became aware that the EPA also initiated a criminal investigation into one or more of the foregoing events. HFEDR has received a grand jury subpoena requesting certain documents be provided to the EPA with respect to the September 2017 event. We are cooperating with this investigation.

Tulsa
HollyFrontier Tulsa Refining LLC ("HFTR") operates under two Consent Decrees with the EPA and the Oklahoma Department of Environmental Quality ("ODEQ") for the East and West Refineries. On December 13, 2017, during a meeting between the parties, ODEQ proposed stipulated penalties related to violations of the two Consent Decrees. The violations concern Clean Air Act regulated fuel gas and flare operations. On July 1, 2019, ODEQ issued a demand letter for stipulated penalties under the East Refinery Consent Decree as proposed in the 2017 meeting. In August 2019, HFTR paid the penalties set forth in the demand letter to ODEQ and the EPA satisfying the requirements of the East Refinery Consent Decree. On September 16, 2019, ODEQ issued a demand letter for stipulated penalties under the West Refinery Consent Decree. Following discussions with ODEQ, in a letter dated April 17, 2020, ODEQ reduced its September 2019 demand for stipulated penalties. In May 2020, HFTR paid to ODEQ and the EPA the penalty set forth in the April 17, 2020 demand letter, which satisfied the requirements of the West Refinery Consent Decree. Separately, on April 3, 2019, during a meeting between the parties, the EPA notified HFTR of potential monitoring violations of the Consent Decrees. EPA has not issued a demand for penalties with respect to the alleged monitoring violations.

Woods Cross
HollyFrontier Woods Cross Refining LLC ("HFWCR") operates under a federal consent decree with the EPA and the Utah Department of Environmental Quality. On November 3, 2020, HFWCR received a letter from the EPA identifying potential violations of HFWCR's federal consent decree that occurred from calendar year 2015 through the present. HFWCR is evaluating the details of the EPA's letter and will provide a response to the EPA within 30 days of its receipt of the letter as requested by the EPA.

Federal Trade Commission

On July 23, 2019, the Federal Trade Commission ("FTC") issued a Civil Investigative Demand and a related Subpoena Duces Tecum requesting we provide specified information relating to the Sonneborn acquisition that closed on February 1, 2019. We are in the process of responding to the FTC request. Based on the limited information that we have at this time, we are unable to predict the outcome of this request. On December 14, 2018, we received early termination of the applicable waiting period under the Hart-Scott-Rodino Antitrust Improvements Act from the FTC and Department of Justice with respect to the Sonneborn acquisition. On January 17, 2019, we received early termination of the applicable waiting period under the German antitrust laws with respect to the Sonneborn acquisition. Early termination is granted to transactions that the antitrust agencies determine raise no substantive competition concerns.

Renewable Fuel Standard

Various subsidiaries of HollyFrontier moved to intervene in four lawsuits brought by renewable fuel interest groups against the EPA in federal courts alleging violations of the Renewable Fuel Standard under the Clean Air Act and challenging the EPA's handling of small refinery exemptions. We intervened to vigorously defend the EPA's position on small refinery exemptions because we believe the EPA correctly applied applicable law to the matters at issue. The U.S. Court of Appeals for the DC Circuit dismissed one of these four lawsuits on November 12, 2019 for lack of jurisdiction. On January 24, 2020, in a second of these lawsuits, the U.S. Court of Appeals for the Tenth Circuit vacated the small refinery exemptions granted to two of our refineries for 2016 and remanded the case to the EPA for further proceedings. On March 24, 2020, various subsidiaries of HollyFrontier filed a Petition for Rehearing with the U.S. Court of Appeals for the Tenth Circuit. On April 7, 2020, the Tenth Circuit denied our request to reconsider its decision, and on April 15, 2020, the Tenth Circuit entered its mandate, remanding the matter back to the EPA. It is not clear at this time what steps the EPA will take with respect to our 2016 small refinery exemptions, or how the case will impact future small refinery exemptions. On September 4, 2020, various subsidiaries of HollyFrontier filed a Petition for a Writ of Certiorari with the U.S. Supreme Court appealing the Tenth Circuit decision. The third lawsuit is before the U.S. Court of Appeals for the Tenth Circuit, and the matter is fully briefed and remains pending before that court. The fourth lawsuit is before the U.S. Court of Appeals for the DC Circuit, and we anticipate briefing of the issues before the court to commence in the fourth quarter of 2020.

Other

We are a party to various other litigation and proceedings that we believe, based on advice of counsel, will not either individually or in the aggregate have a materially adverse impact on our financial condition, results of operations or cash flows.

Item 1A. Risk Factors

There have been no material changes in our risk factors as previously disclosed in Part 1, "Item 1A. Risk Factors" of our Annual Report on Form 10-K for the fiscal year ended December 31, 2019 and in Part II, "Item 1A. Risk Factors" of our Quarterly Report on Form 10-Q for the quarter ended June 30, 2020. You should carefully consider the risk factors discussed in our 2019 Form 10-K and June 30, 2020 Form 10-Q, which could materially affect our business, financial condition or future results. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition or future results.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

(c) Common Stock Repurchases Made in the Quarter

Under our common stock repurchase programs, repurchases are being made from time to time in the open market or privately negotiated transactions based on market conditions, securities law limitations and other factors. The following table includes repurchases made under these programs during the third quarter of 2020.

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs
July 2020	—	$ —	—	$ 1,000,000,000
August 2020	—	$ —	—	$ 1,000,000,000
September 2020	—	$ —	—	$ 1,000,000,000
Total for July to September 2020	—		—	

Item 6. Exhibits

The Exhibit Index on page 63 of this Quarterly Report on Form 10-Q lists the exhibits that are filed or furnished, as applicable, as part of the Quarterly Report on Form 10-Q.

Exhibit Index

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation of HollyFrontier Corporation (incorporated by reference to Exhibit 3.1 of Registrant’s Current Report on Form 8-K filed July 8, 2011, File No. 1-03876).
3.2	Amended and Restated By-Laws of HollyFrontier Corporation (incorporated by reference to Exhibit 3.1 of Registrant’s Current Report on Form 8-K filed February 20, 2014, File No. 1-03876).
4.1	Second Supplemental Indenture, dated as of September 28, 2020, between HollyFrontier Corporation and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 4.2 of Registrant’s Current Report on Form 8-K dated September 28, 2020, File No. 1-03876).
4.2	Form of 2.625% Senior Notes due 2023 (included in Exhibit 4.1).
4.3	Form of 4.500% Senior Notes due 2030 (included in Exhibit 4.1).
10.1	First Amendment to Fifth Amended and Restated Master Lease and Access Agreement dated as of August 4, 2020, effective as of January 23, 2020, by and among certain subsidiaries of Holly Energy Partners, L.P. and certain subsidiaries of HollyFrontier Corporation (incorporated by reference to Exhibit 10.5 of Registrant’s Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2020, File No. 1-03876).
31.1*	Certification of Chief Executive Officer under Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification of Chief Financial Officer under Section 302 of the Sarbanes-Oxley Act of 2002.
32.1**	Certification of Chief Executive Officer under Section 906 of the Sarbanes-Oxley Act of 2002.
32.2**	Certification of Chief Financial Officer under Section 906 of the Sarbanes-Oxley Act of 2002.
101++	The following financial information from HollyFrontier Corporation’s Quarterly Report on Form 10-Q for the quarter ended September 30, 2020, formatted as inline XBRL (Inline Extensible Business Reporting Language): (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Income, (iii) Consolidated Statements of Comprehensive Income, (iv) Consolidated Statements of Cash Flows, and (v) Notes to the Consolidated Financial Statements. The instance document does not appear in the interactive data file because its XBRL tags are embedded within the inline XBRL document.
104	Cover page Interactive Data File (formatted as inline XBRL and contained in exhibit 101).

* Filed herewith.
** Furnished herewith.
++Filed electronically herewith.

SIGNATURES

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

HOLLYFRONTIER CORPORATION
(Registrant)

Date: November 5, 2020

/s/ Richard L. Voliva III
Richard L.Voliva III
Executive Vice President and
Chief Financial Officer
(Principal Financial Officer)

Date: November 5, 2020

/s/ Indira Agarwal
Indira Agarwal
Vice President, Controller and
Chief Accounting Officer
(Principal Accounting Officer)

Exhibit 31.1

CERTIFICATION

I, Michael C. Jennings, certify that:

1. I have reviewed this quarterly report on Form 10-Q of HollyFrontier Corporation;
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 officers 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 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 officers 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 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

November 5, 2020

/s/ Michael C. Jennings

Michael C. Jennings
Chief Executive Officer and President

Exhibit 31.2

CERTIFICATION

I, Richard L. Voliva III, certify that:

1. I have reviewed this quarterly report on Form 10-Q of HollyFrontier Corporation;
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 officers 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 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 officers 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 registrant’s board of directors (or persons performing the equivalent functions):
    a. all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and
    b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: November 5, 2020

/s/ Richard L. Voliva III

Richard L. Voliva III

Executive Vice President and Chief Financial Officer

Exhibit 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER UNDER SECTION 906 OF THE SARBANES OXLEY ACT OF 2002, 18 U.S.C. § 1350

In connection with the accompanying report on Form 10-Q for the quarterly period ended September 30, 2020 and filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Michael C. Jennings, Chief Executive Officer of HollyFrontier Corporation (the "Company") hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

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

Date: November 5, 2020

/s/ Michael C. Jennings

Michael C. Jennings
Chief Executive Officer and President

Exhibit 32.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER UNDER SECTION 906 OF THE SARBANES OXLEY ACT OF 2002, 18 U.S.C. § 1350

In connection with the accompanying report on Form 10-Q for the quarterly period ended September 30, 2020 and filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Richard L. Voliva III, Chief Financial Officer of HollyFrontier Corporation (the "Company") hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

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

Date: November 5, 2020

/s/ Richard L. Voliva III

Richard L. Voliva III
Executive Vice President and Chief Financial Officer