UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2019

OR

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

Commission File No. 001-36550

PAR PACIFIC HOLDINGS, INC.
(Exact name of registrant as specified in its charter)

Delaware	**84-1060803**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
825 Town & Country Lane, Suite 1500	
Houston, Texas	**77024**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (281) 899-4800

Securities registered under Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of Exchange on which registered
Common stock, $0.01 par value	**PARR**	**New York Stock Exchange**

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

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 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 Act). Yes ☐ No ☒

The aggregate market value of voting and non-voting common equity held by non-affiliates of the registrant was approximately $763,283,917 based on the closing sales price of the common stock on the New York Stock Exchange as of June 28, 2019. As of February 18, 2020, 53,375,501 shares of the registrant's Common Stock, $0.01 par value, were issued and outstanding.

Documents Incorporated By Reference

Certain information required to be disclosed in Part III of this report is incorporated by reference from the registrant's definitive proxy statement or an amendment to this report, which will be filed with the SEC not later than 120 days after the end of the fiscal year covered by this report.

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Glossary of Selected Industry Terms

Unless otherwise noted or indicated by context, the following terms used in this Annual Report on Form 10- K have the following meanings:

barrel or bbl	A common unit of measure in the oil industry, which equates to 42 gallons.
blendstocks	Various compounds that are combined with gasoline or diesel from the crude oil refining process to make finished gasoline and diesel; these may include natural gasoline, FCC unit gasoline, ethanol, reformate, or butane, among others.
Brent	A light, sweet North Sea crude oil, characterized by an API gravity of 38 degrees and a sulfur content of approximately 0.4% by weight that is used as a benchmark for other crude oils.
cardlock	Automated unattended fueling sites that are open all day and are designed for commercial fleet vehicles.
catalyst	A substance that alters, accelerates, or instigates chemical changes, but is not produced as a product of the refining process.
CO_2	Carbon dioxide.
condensate	Light hydrocarbons which are in gas form underground, but are a liquid at normal temperatures and pressure.
crack spread	A simplified calculation that measures the difference between the price for refined products and crude oil. For example, we reference the 3-1-2 Singapore crack spread, which approximates the per barrel results from processing three barrels of Brent crude oil to produce one barrel of gasoline and two barrels of distillates (diesel and jet fuel).
distillates	Refers primarily to diesel, heating oil, kerosene, and jet fuel.
ethanol	A clear, colorless, flammable oxygenated liquid. Ethanol is typically produced chemically from ethylene or biologically from fermentation of various sugars from carbohydrates found in agricultural crops and cellulosic residues from crops or wood. It is used in the United States as a gasoline octane enhancer and oxygenate.
feedstocks	Crude oil or partially refined petroleum products that are further processed into refined products.
jobber	A petroleum marketer.
LSFO	Low sulfur fuel oil.
Mbbls	Thousand barrels of crude oil or other liquid hydrocarbons.
Mbpd	Thousand barrels per day.
Mcf	Thousand cubic feet, a unit of measurement for natural gas.
MMbbls	Million barrels of crude oil or other liquid hydrocarbons.
MMcf	Million cubic feet, a unit of measurement for natural gas.
MMcfd	Million cubic feet per day.
MMcfe	Million cubic feet equivalent which is determined by using the ratio of six Mcf of natural gas to one Bbl of crude oil.
MMbtu	Million British thermal units.
MW	Megawatt.
NGL	Natural gas liquid.
NOx	Nitrogen oxides.
refined products	Petroleum products, such as gasoline, diesel, and jet fuel, that are produced by a refinery.
throughput	The volume processed through a unit or refinery.
turnaround	A periodically required standard procedure to inspect, refurbish, repair, and maintain a refinery. This process involves the shutdown and inspection of major processing units and typically occurs every three to seven years, depending on unit type.
single-point mooring	Also known as a single buoy mooring, refers to a loading buoy that is anchored offshore and serves as an interconnect for tankers loading or offloading crude oil and refined products.
SO_2	Sulfur dioxide.
WTI	West Texas Intermediate crude oil, a light, sweet crude oil, typically characterized by an API gravity between 38 degrees and 40 degrees and a sulfur content of approximately 0.3% by weight that is used as a benchmark for other crude oils.
yield	The percentage of refined products that is produced from crude oil and other feedstocks, net of fuel used as energy.

PART I

Item 1. BUSINESS

OVERVIEW

Par Pacific Holdings, Inc., headquartered in Houston, Texas, owns and operates market-leading energy and infrastructure businesses. Our strategy is to acquire and develop energy and infrastructure businesses in logistically-complex markets.

Our business is organized into three primary segments:

1) **Refining** - We own and operate four refineries with total throughput capacity of over 200 Mbpd. Our refineries in Kapolei, Hawaii produce ultra-low sulfur diesel ("ULSD"), gasoline, jet fuel, marine fuel, low sulfur fuel oil ("LSFO"), and other associated refined products primarily for consumption in Hawaii. Our refinery in Newcastle, Wyoming produces gasoline, ULSD, jet fuel, and other associated refined products that are primarily marketed in Wyoming and South Dakota. Our refinery in Tacoma, Washington produces distillates, gasoline, asphalt, and other associated refined products that are primarily marketed in the Pacific Northwest.

2) **Retail** - We operate 124 retail outlets in Hawaii, Washington, and Idaho. Our retail outlets in Hawaii sell gasoline, diesel, and retail merchandise throughout the islands of Oahu, Maui, Hawaii, and Kauai. Our Hawaii retail network includes Hele and "76" branded retail sites, company-operated convenience stores, 7-Eleven operated convenience stores, other sites operated by third parties, and unattended cardlock stations. In addition to the rebranding of 40 of our fueling stations in Hawaii to Hele as of December 31, 2019, we rebranded 28 of our 34 company-operated convenience stores in Hawaii to "nomnom," a new proprietary brand. Our retail outlets in Washington and Idaho sell gasoline, diesel, and retail merchandise and operate under the "Cenex®" and "Zip Trip®" brand names.

3) **Logistics** - We operate an extensive multi-modal logistics network spanning the Pacific, the Northwest, and the Rockies. We own and operate terminals, pipelines, a single-point mooring ("SPM"), and trucking operations to distribute refined products throughout the islands of Oahu, Maui, Hawaii, Molokai, and Kauai. We lease marine vessels for the movement of petroleum, refined products, and ethanol between the U.S. West Coast and Hawaii. We own and operate a crude oil pipeline gathering system, a refined products pipeline, storage facilities, and loading racks in Wyoming and a jet fuel storage facility and pipeline that serve Ellsworth Air Force Base in South Dakota. We own and operate logistics assets in Washington, including a marine terminal, a unit train-capable rail loading terminal, storage facilities, a truck rack, and a proprietary pipeline that serves McChord Air Force Base.

We also own a 46.0% equity investment in Laramie Energy, LLC ("Laramie Energy"), a joint venture entity focused on producing natural gas in Garfield, Mesa, and Rio Blanco Counties, Colorado.

On January 9, 2018, we entered into an Asset Purchase Agreement with CHS Inc. to acquire twenty-one (21) owned retail gasoline, convenience store facilities and twelve (12) leased retail gasoline, convenience store facilities, all at various locations in Washington and Idaho (collectively, "Northwest Retail"). On March 23, 2018, we completed the acquisition for cash consideration of approximately $74.5 million (the "Northwest Retail Acquisition"). The results of operations of Northwest Retail are included in our retail segment commencing March 23, 2018.

On August 29, 2018, we entered into a Topping Unit Purchase Agreement with IES Downstream, LLC ("IES") to purchase certain of IES's refining units and related assets in addition to certain hydrocarbon and non-hydrocarbon inventory (collectively, the "Par West Acquisition"). On December 19, 2018, we completed the asset purchase for total consideration of approximately $66.9 million, net of a $4.3 million receivable related to net working capital adjustments. The purchase price consisted of $47.6 million in cash and approximately 1.1 million shares of our common stock with a fair value of $19.3 million. The results of operations of the acquired assets are included in our refining segment commencing December 19, 2018.

On November 26, 2018, we entered into a Purchase and Sale Agreement to acquire U.S. Oil & Refining Co. and certain affiliated entities (collectively, "U.S. Oil"), a privately-held downstream business (the "Washington Acquisition"). The Washington Acquisition included a 42 Mbpd refinery, a marine terminal, a unit train-capable rail loading terminal, and 2.9 MMbbls of refined product and crude oil storage. The refinery and associated logistics system are strategically located in Tacoma, Washington, and currently serve the Pacific Northwest market. On January 11, 2019, we completed the Washington Acquisition for a total purchase price of $326.5 million, including acquired working capital, consisting of cash consideration of $289.5 million and approximately 2.4 million shares of our common stock with a fair value of $37.0 million issued to the seller of U.S. Oil. The Washington refinery's results of operations are included in our refining and logistics segments commencing January 11, 2019.

Our Corporate and Other reportable segment primarily includes general and administrative costs. Please read Note 21—Segment Information to our consolidated financial statements under Item 8 of this Form 10-K for detailed information on our operating results by segment.

Corporate Information

Our common stock is listed and trades on the New York Stock Exchange (the "NYSE") under the ticker symbol "PARR." Our principal executive office is located at 825 Town & Country Lane, Suite 1500, Houston, Texas 77024 and our telephone number is (281) 899-4800. Throughout this Annual Report on Form 10-K, the terms "Par," "the Company," "we," "our," and "us" refer to Par Pacific Holdings, Inc. and its consolidated subsidiaries unless the context suggests otherwise.

Available Information

Our website address is *www.parpacific.com*. Information contained on our website is not part of this Annual Report on Form 10-K. Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any other materials filed with, or furnished to, the U.S. Securities and Exchange Commission ("SEC") by us are available on our website (under "Investors") free of charge, as soon as reasonably practicable after such reports are filed with, or furnished to, the SEC. Alternatively, you may access these reports at the SEC's website at *www.sec.gov*.

OPERATING SEGMENTS

Refining

Our refining segment buys and refines crude oil and other feedstocks into petroleum products (such as gasoline and distillates) at our Hawaii, Wyoming, and Washington refineries.

Hawaii Refineries

Our Hawaii refineries are located in Kapolei, Hawaii, on the island of Oahu and are rated at a combined 148 Mbpd throughput capacity. The Hawaii refineries' major processing units include crude distillation, vacuum distillation, visbreaking, hydrocracking, naphtha hydrotreating, diesel hydrotreating, and reforming units, which produce ULSD, gasoline, jet fuel, marine fuel, LSFO, HSFO, asphalt, and other associated refined products. We believe the configuration of our Hawaii refineries uniquely fit the demands of the Hawaii market. The Hawaii refineries consist of two refinery locations that are approximately two miles from one another.

Set forth below are summaries of the capacity of our Hawaii refineries as of December 31, 2019:

Par East and Par West	Capacity (Mbpd)
Crude Units	148
Vacuum Distillation Units	75
Hydrocracker	19
Catalytic Reformer	13
Visbreaker	11
Naphtha Hydrotreater	13
Diesel Hydrotreater	10

Par East and Par West	Capacity
Hydrogen Plant (MMcfd)	18
Co-generation Turbine Unit (MW)	32

We completed the construction of a new 10 Mbpd diesel hydrotreater unit during the third quarter of 2019 at a cost of approximately $27 million. The new unit allows us to convert an additional five to seven Mbpd of intermediate products into jet fuel and/or ULSD and helps position us to meet Hawaii's jet fuel and bunker fuel demands following the new regulations regarding marine fuels beginning in 2020 as set by the International Maritime Organization ("IMO 2020").

We source our crude oil for the Hawaii refineries from North America, Asia, Latin America, Africa, the Middle East, and other sources.

Crude oil is received into the Hawaii refineries' tank farm, which includes 2.3 MMbbls of total owned crude oil storage, and/or third-party crude oil storage. We process the crude oil through various refining units into products and store them in the Hawaii refineries' owned 2.5 MMbbls of refined and additional third-party product storage. This storage capacity allows us to manage the various product requirements of our customers.

We finance our Hawaii refineries' hydrocarbon inventories through our Supply and Offtake Agreements with J. Aron & Company LLC ("J. Aron"). Under the Supply and Offtake Agreements, J. Aron holds title to all crude oil and refined product stored in tankage at the Hawaii refineries. We purchase crude oil from J. Aron on a daily basis at market prices and sell refined products to J. Aron as they are produced. We repurchase these refined products from J. Aron prior to selling them to third parties.

The Hawaii refineries operated at an average combined throughput of 109.0 Mbpd, or 74% utilization, to meet local demand for the year ended December 31, 2019. Below is a summary of our Hawaii refineries' product yield percentages for the years ended December 31, 2019, 2018, and 2017:

	Year Ended December 31,		
	2019	**2018**	**2017**
Combined Feedstocks Throughput (Mbpd) (1)	109.0	74.9	73.7
Par East Throughput (Mbpd) (1)	71.5	73.4	73.7
Par West Throughput (Mbpd) (1)	37.5	42.1	—
Yield (% of total throughput):			
Gasoline and gasoline blendstocks	23.0%	27.1%	27.8%
Distillates	44.4%	47.4%	48.2%
Fuel oils	20.3%	17.8%	15.7%
Other products	8.7%	4.5%	5.0%
Total yield	96.4%	96.8%	96.7%

(1) Feedstocks throughput and sales volumes per day for each of the Hawaii refineries for the year ended December 31, 2018 are calculated based on the 365-day period we owned the Par East refinery and the 13-day period for which we owned the Par West refinery. The amounts for the combined Hawaii refineries for the years ended December 31, 2019 and 2018 represent the sum of the Par East and Par West refineries' throughput averaged over the respective years.

Our Hawaii refining business contracts with wholesale and bulk customers as well as our Hawaii retail network. Many of these contracts also involve use of our Hawaii Logistics assets to ultimately serve each customer. Wholesale customers include jobbers and other non-end users, as well as 47 locations where we deliver fuel to a location that subsequently sells the product at retail to the end user. Bulk customers include utilities, airlines, military, marine vessels, industrial end-users, and exports.

The profitability of our Hawaii refining business is heavily influenced by crack spreads in the Singapore market. This market reflects the closest liquid market alternative to source refined products for Hawaii. Prior to 2020, the 4-1-2-1 Singapore crack spread (or four barrels of Brent crude oil converted into one barrel of gasoline, two barrels of distillates (diesel and jet fuel) and one barrel of fuel oil) best reflected a market indicator for our Hawaii refineries' operations. The 4-1-2-1 Singapore crack spread averaged $6.68 per barrel during 2019 with a low of $4.34 per barrel average in the fourth quarter and a high of $9.36 per barrel average in the third quarter. After completing the acquisition of Par West, we began shifting our Hawaii production profile to supply the local utilities with low sulfur fuel oil and significantly reduced our high sulfur fuel oil yield. In 2020, following the implementation of IMO 2020, we established the 3-1-2 Singapore Crack Spread (or three barrels of Brent crude oil converted into one barrel of gasoline and two barrels of distillates (diesel and jet fuel)) as a new benchmark for our Hawaii operations. By removing the high sulfur fuel oil reference in the index, we believe the 3-1-2 Singapore Crack Spread is the most representative market indicator of our current operations in Hawaii.

Below is a summary of average crack spreads for the years ended December 31, 2019, 2018, and 2017:

	Year Ended December 31,		
	2019	2018	2017
4-1-2-1 Singapore Crack Spread	$ 6.68	$ 7.22	$ 7.18
3-1-2 Singapore Crack Spread	$ 10.80	$ 10.90	$ 10.63

Washington Refinery

Our Washington refinery is located in Tacoma, Washington, on approximately 139 fee-owned acres and is rated at 42 Mbpd throughput capacity. The Washington refinery's major processing units include crude distillation, vacuum, jet treating, diesel hydrotreating, isomerization, and reforming units, which produce distillates, gasoline, asphalt, and other associated refined products that are primarily marketed in the Pacific Northwest.

We source our crude oil for the Washington refinery primarily from Canadian and Bakken producers as well as other North American sources. Most of the crude oil is delivered to the refinery via our owned unit train facility and the rest is delivered by barge.

Crude oil is received into the refinery tank farm, which includes 1.4 MMbbls of total crude oil storage. We process the crude oil through various refining units into products and store them in the refinery's 1.5 MMbbls of refined product tankage. This storage capacity allows us to manage the various product requirements of our customers in the state of Washington and other targeted market destinations.

We finance our Washington refinery hydrocarbon inventories through an intermediation arrangement (the "Washington Refinery Intermediation Agreement") with Merrill Lynch Commodities, Inc. ("MLC"). Under this arrangement, U.S. Oil purchases crude oil supplied from third-party suppliers and MLC provides credit support for certain crude oil purchases. MLC's credit support can consist of either providing a payment guaranty, causing the issuance of a letter of credit from a third party issuing bank, or purchasing crude oil directly from third parties on our behalf. U.S. Oil holds title to all crude oil and refined products inventories at all times and pledges such inventories, together with all receivables arising from the sales of same, exclusively to MLC.

Set forth below is a summary of the capacity of our Washington refinery as of December 31, 2019:

Washington Refining Unit	Capacity (Mbpd)
Crude Unit	42
Vacuum Unit	19
Naptha Hydrotreaters	10
Catalytic Reformers	6
Diesel Hydrotreater	8
Isomerization	4

The Washington refinery operated at an average throughput of 38.9 Mbpd, or 93% utilization, for the period from January 11, 2019 (the date of acquisition) to December 31, 2019. Below is a summary of the Washington refinery's product yield percentages for the period from January 11, 2019 to December 31, 2019:

	January 11, 2019 to December 31, 2019
Feedstocks Throughput (Mbpd)	38.9
Yield (% of total throughput)	
Gasoline and gasoline blendstocks	23.6%
Distillates	35.6%
Asphalt	18.9%
Other products	19.4%
Total yield	97.5%

Our Washington refining business transports crude oil and refined products through our logistics network and sells refined products to wholesale, bulk, and retail customers primarily in the Pacific Northwest.

We believe the Pacific Northwest 5-2-2-1 Index is the best market indicator for our operations in Tacoma, Washington. The Pacific Northwest 5-2-2-1 Index is computed by taking two parts gasoline (sub-octane), two parts middle distillates (ULSD and jet fuel), and one part fuel oil as created from five barrels of Alaskan North Slope ("ANS") crude oil. The Pacific Northwest 5-2-2-1 Index averaged $15.02 per barrel during the period from January 11, 2019 to December 31, 2019 with a low of $11.09 per barrel average in the first quarter and a high of $17.14 per barrel average in the second quarter.

Wyoming Refinery

Our Wyoming refinery is located in Newcastle, Wyoming, on approximately 121 fee-owned acres and is rated at 18 Mbpd throughput capacity. The Wyoming refinery's major processing units include crude distillation, catalytic cracker, naphtha hydrotreating, and reforming units, which produce gasoline, ULSD, jet fuel, and other associated refined products.

We source our crude oil for the Wyoming refinery from local producers in the Petroleum Administration for Defense District IV Rocky Mountain ("PADD IV") region of the United States as well as other North American sources. Most of the crude oil is delivered to the refinery via our owned pipeline network and the rest is delivered by truck.

Crude oil is received into the refinery tank farm and crude oil terminals, which include 267 Mbbls of total crude oil storage. We process the crude oil through various refining units into products and store them in the Wyoming refinery's 425 Mbbls of refined product tankage. The Wyoming refinery's storage capacity allows us to manage the various product requirements of our customers in the states of Wyoming and South Dakota and other targeted market destinations.

Set forth below is a summary of the capacity of our Wyoming refinery as of December 31, 2019:

Wyoming Refining Unit	Capacity (Mbpd)
Crude Unit	18
Residual Fluid Catalytic Cracker	7
Catalytic Reformer	3
Naphtha Hydrotreater	3
Diesel Hydrotreater	6
Isomerization	5

The Wyoming refinery operated at an average throughput of 17.0 Mbpd, or 94% utilization, for the year ended December 31, 2019. Below is a summary of the Wyoming refinery's product yield percentages for the years ended December 31, 2019, 2018, and 2017:

	Year Ended December 31,		
	2019	2018	2017
Feedstocks Throughput (Mbpd)	17.0	16.4	15.5
Yield (% of total throughput):			
Gasoline and gasoline blendstocks	49.6%	49.5%	51.9%
Distillates	44.5%	45.8%	42.8%
Fuel oil	1.7%	1.6%	2.2%
Other products	1.6%	0.8%	0.8%
Total yield	97.4%	97.7%	97.7%

Our Wyoming refining business sells refined products through our logistics network to wholesale, bulk, and retail customers primarily in the Rapid City, South Dakota, area. Products are also distributed by rail from our refinery to markets beyond our logistics network.

We believe our Wyoming refining operations are best captured by the Wyoming 3-2-1 Index, or three barrels of WTI converted into two barrels of gasoline and one barrel of distillates (jet fuel and diesel). We believe the Wyoming 3-2-1 crack spread, a 50%/50% blend of Rapid City 3-2-1 and Denver 3-2-1 (WTI based) crack spreads, best reflects a market indicator for our

Wyoming refining and fuel distribution operations. The Wyoming 3-2-1 Index averaged $24.90 per barrel during 2019 with a low of $15.09 per barrel average in the first quarter and a high of $28.89 per barrel average in the second quarter.

Below is a summary of average crack spreads for the years ended December 31, 2019, 2018, and 2017:

	Year Ended December 31,		
	2019	**2018**	**2017**
Wyoming 3-2-1 Index	$ 24.90	$ 22.69	$ 21.80

Competition

All facets of the energy industry are highly competitive. Our competitors include major integrated, national, and independent energy companies. Many of these competitors have greater financial and technical resources and staff which may allow them to better withstand and react to changing and adverse market conditions.

Our refining business sources and obtains all of our crude oil from third-party sources and competes globally for crude oil and feedstocks. Our Hawaii refineries, through our facility with J. Aron, have access to a large variety of markets for crude oil imports and product exports. Please read “Item 7. — Management’s Discussion and Analysis of Financial Condition and Results of Operations — Commitments and Contingencies — Supply and Offtake Agreements” of this Form 10-K for further information. Our Wyoming refinery sources its crude oil and feedstocks primarily from the PADD IV region of the United States. Our Washington refinery utilizes an intermediation arrangement with MLC and sources its crude oil and feedstocks primarily from North Dakota and Canada. Please read “Item 7. — Management’s Discussion and Analysis of Financial Condition and Results of Operations — Commitments and Contingencies — Washington Refinery Intermediation Agreement ” of this Annual Report on Form 10-K for further information.

Our Hawaii refineries’ product slate is tailored to meet local on-island demand. Outside the Hawaii market, our refined product sales from our Hawaii refineries typically target the Eastern Asia and U.S. West Coast markets. Our Wyoming refinery primarily sells refined products locally in the PADD IV region. Our Washington refinery primarily sells refined products in the Pacific Northwest region.

Retail

The retail segment includes 91 locations in Hawaii and 33 locations in Washington and Idaho where we set the price to the retail consumer. Of these, 34 of the Hawaii locations and all 33 Washington and Idaho locations are outlets operated by our personnel and include various sizes of kiosks, snack shops, or convenience stores. The remaining 57 Hawaii locations are cardlocks or sites operated by third parties where we retain ownership of the fuel and set retail pricing.

We hold exclusive licenses within the state of Hawaii to utilize the “76” brand for retail locations. Since 2016, we have completed the rebranding of 40 out of our 91 fueling stations in Hawaii to Hele, a new proprietary brand. All of the manned Hawaii locations and one cardlock are currently operated under one of those brands (see table below). The “76” license agreement expires September 24, 2024, unless extended by mutual agreement. Through December 31, 2019, we completed the rebranding of 28 of our 34 company-operated convenience stores in Hawaii to “nomnom,” a new proprietary brand.

Our retail outlets in Washington and Idaho operate under the “Cenex®” and “Zip Trip®” brand names. As part of the Northwest Retail Acquisition, Par and CHS, Inc. entered into a multi-year branded petroleum marketing agreement for the continued supply of Cenex®-branded refined products to the 33 acquired Cenex® Zip Trip convenience stores.

The following table shows our owned and leased retail outlets by location and type:

Location and Channel of Trade	"76" Brand	Hele Brand	Cenex® Zip Trip Brand	Unbranded	Total
Oahu					
Company operated	2	18	—	—	20
7-Eleven alliance	22	8	—	—	30
Fee operated	5	3	—	—	8
Cardlock	—	1	—	3	4
Oahu total	29	30	—	3	62
Big Island					
Company operated	3	6	—	—	9
Fee operated	3	—	—	—	3
Big Island total	6	6	—	—	12
Maui					
Company operated	1	4	—	—	5
Fee operated	1	—	—	—	1
Maui total	2	4	—	—	6
Kauai					
Fee operated	3	—	—	—	3
Cardlock	—	—	—	8	8
Kauai total	3	—	—	8	11
Total for Hawaii locations	**40**	**40**	**—**	**11**	**91**
Washington					
Company operated	—	—	25	—	25
Washington total	—	—	25	—	25
Idaho					
Company operated	—	—	8	—	8
Idaho total	—	—	8	—	8
Total for Washington and Idaho locations	**—**	**—**	**33**	**—**	**33**
Total for Retail segment	**40**	**40**	**33**	**11**	**124**

Competition

Competitive factors that affect our retail performance include product price, station appearance, location, customer service, and brand awareness. Our Hawaii competitors include the Shell, Texaco, Costco, Safeway, and Sam's Club national brands, regional brand Aloha, and other local retailers. Competitors of our Northwest Retail assets include the Chevron, Exxon, Conoco, Safeway, and Costco national brands, regional brands such as Maverik, Holiday, and Fred Meyer, and other local retailers.

Logistics

Our logistics segment generates revenues by charging fees for transporting crude oil to our refineries, delivering refined products to wholesale and bulk customers and to our retail business, and storing crude oil and refined products. Substantially all of our revenues from our logistics segment represent intercompany transactions that are eliminated in consolidation.

Hawaii Logistics

Our logistics network extends throughout the state of Hawaii. On Oahu, the system begins with our SPM located 1.7 miles offshore of our Par East refinery. This SPM allows for the safe, reliable, and efficient receipt of crude oil shipments to the Hawaii refineries, as well as both the receipt and export of finished products. Connecting the SPM to the Hawaii refineries are three undersea pipelines: a 30-inch line for crude oil, a 20-inch line, and a 16-inch line, both for the import or export of refined products. From the Hawaii refineries' gates, we distribute refined products through our logistics network throughout the islands of Oahu, Maui, Hawaii, Molokai, and Kauai and for export to the U.S. West Coast and Asia.

The Oahu logistics network includes a 27-mile wholly owned and operated pipeline network that transports refined products from our Hawaii refineries to delivery locations. The majority of our Oahu refined product volumes are distributed through a multi-product pipeline (the "Honolulu Products Pipeline") to (i) our leased and operated Sand Island terminal, (ii) the Honolulu International Airport, (iii) interconnections to Navy and Air Force fuel facilities, and (iv) a third-party terminal in Honolulu Harbor. In addition to the Honolulu Products Pipeline, we own four proprietary pipelines connecting our Hawaii refineries to Kalaeloa Barbers Point Harbor, approximately three miles from the Par East refinery. The four pipelines deliver refined products to barges for distribution to the neighboring islands or export, the local utility pipeline and storage network, and another third-party terminal on the west side of Oahu. The Oahu pipeline network is generally configured to be bidirectional, allowing for both delivery and receipt of products.

In connection with the Par West Acquisition, we entered into a long-term agreement with IES for storage and throughput at the Par West refinery. The agreement provides for the right to utilize 2 MMbbls of dedicated crude oil and refined product storage, as well as certain IES logistics assets, including its off-shore mooring and Honolulu pipeline system.

During the first half of 2019, crude oil was transferred to the Par West refinery via the IES off-shore mooring and a 30-inch undersea pipeline. During the third quarter of 2019, we completed an on-shore pipeline manifold that connects the IES pipeline to our owned SPM pipeline (the "Tie-In"). The Tie-In allows crude oil to be transferred from our SPM to the Par East and Par West refineries. The Tie-In provides operational flexibility and redundancy in the event of maintenance on the off-shore pipelines, subject to availability of the IES off-shore mooring.

Our terminal facilities on Oahu include our Sand Island facility that comprises two tanks with a total capacity of 30 Mbbls, as well as contractual rights to utilize strategically located third-party facilities both near the Hawaii refineries and at Honolulu Harbor near downtown.

We also operate a proprietary trucking business on Oahu to distribute gasoline and road diesel to the final point of sale.

Our logistics network for the islands neighboring Oahu consists of leased barge equipment and refined product tankage and proprietary trucking operations on the islands of Maui, Hawaii, Molokai, and Kauai. We charter several barges to serve our neighbor island markets. We lease three barges in order to serve our product distribution requirements to neighbor islands and bunker demand within the state. The barges deliver to, and product is dispensed from, a neighbor island network of seven petroleum terminals with total storage capacity of 301 Mbbls.

In addition to the movements within Hawaii, we also lease Jones Act marine vessels to allow for the movement of petroleum, refined products, and ethanol between the U.S. West Coast and Hawaii.

Washington Logistics

Our Washington logistics network includes 2.9 MMbbls of storage capacity, a proprietary 14-mile jet fuel pipeline that serves McChord Air Force Base, a marine terminal with 15 acres of waterfront property, a unit train-capable rail loading terminal with 107 unloading spots, and a truck rack with six truck lanes and 10 loading arms. These assets provide connectivity to Bakken, Canadian, and Alaskan crude oil and the Pacific, West Coast, Pacific Northwest, and Rockies product markets.

Wyoming Logistics

Our Wyoming logistics network includes a 98-mile crude oil pipeline gathering system that provides us access to crude oil from the Powder River Basin. This network also includes a 40-mile refined products pipeline that transports product from our Wyoming refinery to a common carrier with access to Rapid City, South Dakota.

The logistics network in Wyoming includes storage, loading racks, and a rail siding at the refinery site. Our crude oil and refined product tanks at the Wyoming refinery have a total capacity of 494 Mbbls. We also own and operate a jet fuel storage facility and pipeline that serve Ellsworth Air Force Base in South Dakota.

Hawaii Market

The Hawaii State Department of Business, Economic Development, and Tourism ("DBEDT") projected Hawaii's economic growth at 1.2% for 2019, continuing the trend of positive but slower growth. Hawaii's economic growth rate for 2020 is expected to match 2019 at 1.2%. While the pace of growth has slowed in recent years, the labor market has remained strong, consumer confidence is elevated, wage growth has remained solid, and consumer spending has continued to grow.

With tourism as the principal engine behind Hawaii's economy, the state continued to register record visitor arrivals in 2019. Through December 2019, visitor arrivals were up 5.4% over 2018 at 10.4 million, continuing an eight year trend of growth. The corresponding nominal visitor expenditures increased 1.4% compared to 2018, with healthy gains from the continental U.S. and Japan, offset by declines from other international markets. Total number of air seats on scheduled flights to Hawaii, a leading indicator of the tourism industry, increased 2.9% during 2019. According to U.S. domestic carriers flying to Hawaii, scheduled air seats to Hawaii during the heavy winter travel season are projected to increase 10.4% in January 2020, 15.6% in February 2020, and 8.1% in March 2020 as compared to the prior year. Demand for jet fuel is somewhat higher in Hawaii during the winter months than during the summer months as tourism increases during the winter months. Refining margins remain volatile and our results of operations may not reflect these historical seasonal trends.

Pacific Northwest and Rockies Markets

Spokane, Washington, and Northwest Idaho are the primary regions of our Pacific Northwest retail operations and the U.S. Census Bureau projected that the population increased 1.2% in Washington and 2.1% in Idaho from 2018 to 2019. Spokane is a regional hub in eastern Washington, with a population of over a half million and a variety of employers in the health care, retail, and other industries. According to the U.S. Bureau of Economic Analysis (the "BEA"), personal income for the Spokane metro area grew by 4.3% between 2017 and 2018, continuing the trend of positive growth since the 2008-2009 recession. Additionally, Amazon is constructing a new fulfillment center near the Spokane International Airport that is anticipated to open in 2020, and future regional growth and increased traffic is expected.

A significant portion of our Washington refinery's refined products stay within the Puget Sound region. Washington is one of the fastest growing states in the union and most of this growth is occurring in the Puget Sound area due to large information industry companies like Microsoft, Amazon, and Expedia. According to the BEA, gross domestic product ("GDP") for Washington grew by 3.1% from 2018 to 2019, leading the Far West states and ranking third nationally. According to the BEA, personal income in Puget Sound's four largest counties grew on average 6.3% between 2017 and 2018 and personal income in the State of Washington grew an average 6.4% and ranked second nationally for the first three quarters of 2019. The Puget Sound region represents approximately 69% of the Washington state population.

The primary market for our Wyoming refined products is the Black Hills Region in South Dakota, driven largely by Pennington, Lawrence, and Meade Counties, which represents nearly half of the state's taxable tourism sales. According to the U.S. Census Bureau, the population in Pennington County, the state's second largest county, increased by 1.37% from 2017 to 2018. According to the BEA, personal income in South Dakota grew by 15.2% from 2018 to 2019. Unemployment in South Dakota continues to remain below the national average unemployment rate at 3.2%.

Demand for gasoline is highly seasonal, with a large increase in demand during the summer driving season. The South Dakota economy is anchored by tourism, including visitors to Mount Rushmore and the Black Hills, as well as government and health care spending. The South Dakota tourism industry marked its 10th consecutive growth year. Visitor spending in South Dakota was approximately $4.1 billion in 2019, an increase of 2.8% over 2018, and there were approximately 14.5 million visitors, a 3.1% increase as compared to 2018. In 2019, $941 million, or 23%, of tourism dollars were spent on transportation services. We also distribute refined products to customers in central and northeastern Wyoming. The economy in Wyoming is sensitive to demand for Powder River Basin coal and other locally-produced commodities. Coal mine production in the Powder River Basin decreased in 2019 and coal prices were slightly lower in 2019; however, the U.S. Energy Information Administration forecasts that coal prices will increase in both 2020 and 2021.

OTHER OPERATIONS

Laramie Energy

As of December 31, 2019, we own a 46.0% equity investment in Laramie Energy, a joint venture entity focused on producing natural gas in Garfield, Mesa, and Rio Blanco Counties, Colorado.

On February 28, 2018, Laramie Energy closed a purchase and contribution agreement with an unaffiliated third party that contributed all of its oil and gas properties located in the Piceance Basin to Laramie Energy, consisting of approximately 24 billion cubic feet equivalent of proved developed producing reserves. The acquired and existing properties produce primarily from the Mesaverde formation and, to a lesser extent, the Mancos formation. The majority of the acquired acreage is adjacent to Laramie Energy's existing assets.

As of December 31, 2019, the estimated proved reserves we own indirectly through Laramie Energy are as follows:

	Gas (MMcf)	Oil (Mbbls)	NGLs (Mbbls)	Total (MMcfe)
Company's share of Laramie Energy				
Proved developed	238,190	938	5,413	276,296
Proved undeveloped	—	—	—	—
Total	238,190	938	5,413	276,296

For more information regarding our proved undeveloped reserves, please read "Item 2. — Properties — Reserves — Proved Undeveloped Reserves" of this Form 10-K.

The following table presents the estimated future net cash flows related to proved developed producing, proved developed non-producing, and proved undeveloped reserves that we own indirectly through Laramie Energy as of December 31, 2019 (in thousands):

	Proved Developed Producing	Proved Developed Non-producing	Proved Undeveloped	Total (1)
Estimated future undiscounted net cash flows	$ 245,801	$ —	$ —	$ 245,801
Standardized measure of discounted future net cash flows	139,835	—	—	139,835

(1) Prices are based on the historical first-day-of-the-month twelve-month average spot price depending on the area. These prices are adjusted for quality, energy content, regional price differentials, and transportation fees. All prices are held constant throughout the lives of the properties. The average adjusted prices are $51.83 per barrel of crude oil, $16.98 per barrel of natural gas liquids, and $2.22 per Mcf of natural gas.

Reconciliation of Standardized Measure to PV-10

PV-10 is the estimated present value of the future net revenues calculated based on our estimated proved reserves before income taxes discounted using a 10% discount rate. PV-10 is considered a non-GAAP financial measure under SEC regulations because it does not include the effects of future income taxes, as is required in computing the standardized measure of discounted future net cash flows. This measure should not be considered a substitute for, or superior to, measures prepared in accordance with U.S. generally accepted accounting principles ("GAAP"). We believe that PV-10 is an important measure that can be used to evaluate the relative significance of Laramie Energy's natural gas and oil properties to other companies and that PV-10 is widely used by securities analysts and investors when evaluating oil and gas companies. Because many factors that are unique to each individual company impact the amount of future income taxes to be paid, the use of a pre-tax measure provides greater comparability of assets when evaluating companies. PV-10 is computed on the same basis as the standardized measure of discounted future net cash flows but without deducting income taxes.

The following table provides a reconciliation of our share of Laramie Energy's standardized measure of discounted future net cash flows to PV-10 at December 31, 2019 (in thousands):

Standardized measure of discounted future net cash flows	$ 139,835
Present value of future income taxes discounted at 10% (1)	—
PV-10	$ 139,835

(1) There is no present value of future income taxes as we believe we have sufficient net operating loss carryforwards to offset any income. Please read Note 20—Income Taxes to our consolidated financial statements under Item 8 of this Form 10-K for further information.

For more information on Laramie Energy's natural gas and oil operations, please read "Item 2. — Properties" of this Form 10-K.

Competition

The natural gas and oil business is highly competitive. The principal markets for natural gas and oil are refineries and transmission companies that have facilities near Laramie Energy's producing properties. Natural gas and oil produced from Laramie Energy's wells are normally sold to various purchasers. Natural gas wells are connected to pipelines generally owned by the natural gas purchasers. A variety of pipeline transportation charges are usually included in the calculation of the price paid for the natural gas. Crude oil is picked up and transported by the purchaser from the wellhead. In some instances, Laramie Energy is charged a fee for the cost of transporting the crude oil, which is deducted from or accounted for in the price paid for the crude oil.

BANKRUPTCY AND PLAN OF REORGANIZATION

Background and General Recovery Trust

In 2011 and 2012, our predecessor, Delta Petroleum Corporation ("Delta") and its subsidiaries (collectively "Debtors") filed voluntary petitions under Chapter 11 of the U.S. Bankruptcy Code in the U.S. Bankruptcy Court for the District of Delaware ("Bankruptcy Court"). In March 2012, the Debtors obtained approval from the Bankruptcy Court to proceed with Laramie Energy II, LLC as the sponsor of a plan of reorganization ("Plan"). Delta emerged from bankruptcy, amended and restated its certificate of incorporation and bylaws, changed its name to Par Petroleum Corporation, and contributed the majority of its natural gas and oil properties to Laramie Energy on August 31, 2012 (the "Emergence Date"). The reorganization converted approximately $265 million of unsecured debt to equity and allowed us to preserve significant tax attributes. On the Emergence Date, the Delta Petroleum General Recovery Trust ("General Trust") was formed to conclude the bankruptcy.

Shares Reserved for Unsecured Claims

The Plan provides that certain allowed general unsecured claims be paid with shares of our common stock. Pursuant to the Plan, allowed claims are settled at a ratio of 54.4 shares per $1,000 of claim. As of December 31, 2019, two related claims totaling approximately $22.4 million remained to be resolved by the Trustee for the General Trust. One of the two remaining claims was filed by the U.S. Government for approximately $22.4 million relating to ongoing litigation concerning a plugging and abandonment obligation in Pacific Outer Continental Shelf Lease OCS-P 0320, comprising part of the Sword Unit in the Santa Barbara Channel, California. The second unliquidated claim, which is related to the same plugging and abandonment obligation, was filed by Noble Energy Inc., the operator and majority interest owner of the Sword Unit. We believe the probability of issuing shares to satisfy the full claim amount is remote, as the obligations upon which such proof of claim is asserted are joint and several among all working interest owners and Delta, our predecessor, owned an approximate 3.4% aggregate working interest in the unit.

The settlement of claims is subject to ongoing litigation and we are unable to predict with certainty how many shares will be required to satisfy all claims. We have accrued approximately $0.5 million representing the estimated value of claims remaining to be settled which are deemed probable and estimable at December 31, 2019. Please read "Item 7. – Management's Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital Resources – Commitments and Contingencies – Bankruptcy Matters" of this Form 10-K for further information.

Closing of the Bankruptcy Cases

On February 27, 2018, the Bankruptcy Court entered its final decree closing the Chapter 11 bankruptcy cases of Delta and the other Debtors, discharging the Recovery Trustee, and finding that all assets of the General Trust were resolved, abandoned, or liquidated and have been distributed in accordance with the requirements of the Plan. In addition, the final decree required the Company or the General Trust, as applicable, to maintain the current reserves owed on account of the remaining claims of the U.S. Government and Noble Energy, Inc.

ENVIRONMENTAL REGULATIONS

General

Our activities are subject to existing federal, state, and local laws and regulations governing environmental quality and pollution control. Although no assurances can be made, we believe that, absent the occurrence of an extraordinary event, compliance with existing federal, state, and local laws, regulations, and rules regulating the release of materials in the environment or otherwise relating to the protection of human health, safety, and the environment will not have a material effect upon our capital expenditures, earnings, or competitive position with respect to our existing assets and operations. We cannot predict what effect additional regulation or legislation, enforcement policies, and claims for damages to property, employees, other persons, and the environment resulting from our operations could have on our activities.

Periodically, we receive communications from various federal, state, and local governmental authorities asserting violations of environmental laws and/or regulations. These governmental entities may also propose or assess fines or require corrective actions for these asserted violations. We intend to respond in a timely manner to all such communications and to take appropriate corrective action. Except as disclosed below, we do not anticipate that any such matters currently asserted will have a material impact on our financial condition, results of operations, or cash flows.

Refining activities

Like other petroleum refiners, our operations are subject to extensive and periodically-changing federal and state environmental regulations governing air emissions, wastewater discharges, and solid and hazardous waste management activities. Many of these regulations are becoming increasingly stringent and the cost of compliance can be expected to increase over time. Our policy is to accrue environmental and clean-up related costs of a non-capital nature when it is probable that a liability has been incurred and the amount can be reasonably estimated. Such estimates may be subject to revision in the future as regulations and other conditions change.

Laramie Energy's Natural gas and oil production

Laramie Energy's activities with respect to exploration and production of natural gas and oil, including the drilling of wells and the operation and construction of pipelines, plants, and other facilities for extracting, transporting, processing, treating, or storing natural gas, crude oil, and other petroleum products, are subject to stringent environmental regulation by state and federal authorities, including the U.S. Environmental Protection Agency ("EPA"). Such regulation can increase the costs of planning, designing, installing, and operating such facilities. Although we believe that compliance with environmental regulations will not have a material adverse effect on us, risks of substantial costs and liabilities are inherent in natural gas and oil production, transport, and storage operations and there can be no assurance that significant costs and liabilities will not be incurred. Moreover, it is possible that other developments, such as spills or other unanticipated releases, stricter environmental laws and regulations, and claims for damages to property or persons resulting from oil and gas production, transport, or storage would result in substantial costs and liabilities to us.

Climate Change and Regulation of Greenhouse Gases

According to many scientific studies, emissions of CO_2, methane, NO_X, and other gases commonly known as greenhouse gases ("GHGs") may be contributing to global warming of the earth's atmosphere and to global climate change. In response to the scientific studies, legislative and regulatory initiatives have been underway to limit GHG emissions. The U.S. Supreme Court determined that GHG emissions fall within the federal Clean Air Act ("CAA") definition of an "air pollutant." In response, the EPA promulgated an endangerment finding, paving the way for regulation of GHG emissions under the CAA. The EPA has now begun regulating GHG under the CAA. New construction or material expansions that meet certain GHG emissions thresholds will likely require that, among other things, a GHG permit be issued in accordance with the federal CAA regulations and we will be required, in connection with such permitting, to undertake a technology review to determine appropriate controls to be implemented with the project in order to reduce GHG emissions. Based on current company operations, however, Laramie Energy's natural gas and oil exploration and production activities and our existing refining activities are not subject to current federal GHG permitting requirements.

The EPA has also promulgated rules requiring large sources to report their GHG emissions. Reports are being made in connection with our refining business. Sources subject to these reporting requirements also include on and offshore petroleum and natural gas production and onshore natural gas processing and distribution facilities that emit 25,000 metric tons or more of CO_2 equivalent per year in aggregate emissions from all site sources.

In 2007, the State of Hawaii passed Act 234, which required that GHG emissions be rolled back on a statewide basis to 1990 levels by the year 2020. In June of 2014, the Hawaii Department of Health ("DOH") adopted regulations that require each major facility to reduce CO_2 emissions by 16% by 2020 relative to a calendar year 2010 baseline (the first year in which GHG emissions were reported to the EPA under 40 CFR Part 98). The GHG rules include an alternative for facilities to demonstrate that further GHG reductions are not economically viable and an additional provision that authorized the DOH to issue a waiver if GHGs are being effectively controlled as a consequence of other state initiatives and regulations such as the Renewable Portfolio Standard. The Hawaii refineries' capacity to materially reduce fuel use and GHG emissions is limited because most energy conservation measures have already been implemented over the past 20 years. Hawaii's regulation allows for "partnering" with other facilities (principally power plants) that have already dramatically reduced GHG emissions or are on schedule to reduce CO_2 emissions in order to comply with the state's Renewable Portfolio Standards. The DOH's GHG regulation allows, and the Hawaii refineries submitted, a GHG reduction plan, which establishes a combined GHG limit between the Par East and Par West refineries and includes an assessment of alternatives which demonstrates that additional reductions are not cost-effective or necessary because the State of Hawaii has already reached the 1990 levels according to a report prepared by the DOH in January 2019.

Further regulatory, legislative, and judicial developments are likely to occur in the future. Such developments may affect how these GHG initiatives will impact us. They may also impact the use of and demand for petroleum products, which could impact our business. Further, apart from these developments, tort claims alleging property damage against GHG emissions sources may be asserted. Due to the uncertainties surrounding the regulation of and other risks associated with GHG emissions, we cannot predict the financial impact of related developments on us.

National Ambient Air Quality Standards

The EPA has adopted a number of more stringent National Ambient Air Quality Standards ("NAAQS"). States are required to develop State Implementation Plans and ultimately local air districts are required to adopt rules designed to improve air quality over time. More stringent air pollutant standards and corresponding rules have already impacted and will continue to cause many refineries to invest heavily in additional air pollution controls. Thus far, Hawaii air quality, particularly on Oahu where our Hawaii refineries are located, has met even the most recent NAAQS and the Hawaii refineries have not been required to install new controls as result of local rules. Even so, NAAQS could and, to a degree, have already forced some changes for our customer base. Power plants on the Big Island, where SO_2 levels are already elevated due to volcanic activity, are switching from LSFO to diesel fuel. On Oahu, the state's largest utility frequently cites compliance with NAAQS as one of its justifications for moving towards a cleaner bridge fuel, potentially diesel or liquefied natural gas, before reaching its renewable goals. On October 1, 2015, the EPA adopted rules that would substantially tighten the NAAQS for ground-level ozone. This rule will cause many areas of the country to require additional controls and limits on combustion emissions and emissions of volatile organic compounds. We do not currently anticipate that the more stringent NAAQS will materially impact our Hawaii, Washington, or Wyoming operations.

Fuel Standards

In 2007, the U.S. Congress passed the Energy Independence and Security Act ("EISA") which, among other things, set a target fuel economy standard of 35 miles per gallon for the combined fleet of cars and light trucks in the U.S. by model year 2020 and contained an expanded Renewable Fuel Standard (the "RFS"). In August 2012, the EPA and National Highway Traffic Safety Administration ("NHTSA") jointly adopted regulations that establish an average industry fuel economy of 54.5 miles per gallon by model year 2025. On August 8, 2018, the EPA and NHTSA jointly proposed to revise existing fuel economy standards for model years 2021-2025 and to set standards for 2026 for the first time. The agencies have not yet issued a final rule revising the fuel economy standards. Although the revised fuel economy standards are expected to be less stringent than the initial standards for model years 2021-2025, it is uncertain whether the revised standards will increase year over year. Higher fuel economy standards have the potential to reduce demand for our refined transportation fuel products.

Under EISA, the RFS requires an increasing amount of renewable fuel to be blended into the nation's transportation fuel supply, up to 36 billion gallons by 2022. In the near term, the RFS will be satisfied primarily with fuel ethanol blended into gasoline. We, and other refiners subject to the RFS, may meet the RFS requirements by blending the necessary volumes of renewable fuels produced by us or purchased from third parties. To the extent that refiners will not or cannot blend renewable fuels into the products they produce in the quantities required to satisfy their obligations under the RFS program, those refiners must purchase renewable credits, referred to as Renewable Identification Numbers ("RINs"), to maintain compliance. To the extent that we exceed the minimum volumetric requirements for blending of renewable fuels, we can retain these RINs for current or future RFS compliance or sell those on the open market. The RFS may present production and logistics challenges for both the renewable fuels and petroleum refining and marketing industries in that we may have to enter into arrangements to purchase RINs with other parties or purchase cellulosic biofuels RINs ("D3") waivers from the EPA to meet our obligations to use advanced biofuels, including biomass-based diesel and cellulosic biofuel, with potentially uncertain supplies of these new fuels.

In October 2010, the EPA issued a partial waiver decision under the federal CAA to allow for an increase in the amount of ethanol permitted to be blended into gasoline from 10% ("E10") to 15% ("E15") for 2007 and newer light duty motor vehicles. In 2019, the EPA approved year-round sales of E15. There are numerous issues, including state and federal regulatory issues, that need to be addressed before E15 can be marketed on a large scale for use in traditional gasoline engines; however, increased renewable fuel in the nation's transportation fuel supply could reduce demand for our refined products.

In March 2014, the EPA published a final Tier 3 gasoline standard that requires, among other things, that gasoline contain no more than 10 parts per million ("ppm") sulfur on an annual average basis and no more than 80 ppm sulfur on a per-gallon basis. The standard also lowers the allowable benzene, aromatics, and olefins content of gasoline. The effective date for the new standard was January 1, 2017, however, approved small volume refineries had until January 1, 2020 to meet the standard. The Par East refinery was required to comply with Tier 3 gasoline standards within 30 months of June 21, 2016, the date it was disqualified from small volume refinery status. On March 19, 2015, the EPA confirmed the small refinery status of our Wyoming refinery. The Par East refinery, our Wyoming refinery, and our Washington refinery, acquired in January 2019, were all granted extensions of small refinery exemptions by the EPA for 2018.

Beginning on June 30, 2014, new sulfur standards for fuel oil used by marine vessels operating within 200 miles of the U.S. coastline (which includes the entire Hawaiian Island chain) was lowered from 10,000 ppm (1%) to 1,000 ppm (0.1%). The sulfur standards began at the Hawaii refineries and were phased in so that by January 1, 2015, they were fully aligned with the International Marine Organization ("IMO") standards and deadline. The more stringent standards apply universally to both U.S. and foreign flagged ships. Although the marine fuel regulations provided vessel operators with a few compliance options such as installation of on-board pollution controls and demonstration unavailability, many vessel operators were forced to switch to a distillate fuel while operating within the Emission Control Area ("ECA"). Beyond the 200 mile ECA, large ocean vessels are still allowed to burn marine fuel with up to 3.5% sulfur. Our Hawaii refineries are capable of producing the 1% sulfur residual fuel oil that was previously required within the ECA. Although our Hawaii refineries remain in a position to supply vessels traveling to and through Hawaii, the market for 0.1% sulfur distillate fuel and 3.5% sulfur residual fuel is much more competitive.

In addition to federal requirements, several states, including Washington, have proposed or enacted low carbon fuel standards applicable to transportation fuels. The Washington proposal would create a carbon intensity score for transportation fuels, and require fuel producers and importers who fall short of carbon intensity goals to purchase credits.

Additionally, the IMO has adopted standards to further reduce the global limit on sulfur content in maritime fuels to 0.5% beginning in 2020 ("IMO 2020"). Like the rest of the refining industry, we have been focused on meeting these standards, which may impact our results of operations.

There will be compliance costs and uncertainties regarding how we will comply with the various requirements contained in the EISA, RFS, IMO 2020, and other fuel-related regulations. We may experience a decrease in demand for refined petroleum products due to an increase in combined fleet mileage or due to refined petroleum products being replaced by renewable fuels.

Solid and Hazardous Waste

Several of our businesses generate wastes, including hazardous wastes, that are subject to regulation under the federal Resource Conservation and Recovery Act ("RCRA") and state statutes. The EPA has limited the disposal options for certain hazardous wastes and state regulation of the handling and disposal of refining and natural gas and oil exploration and production wastes and solid wastes is becoming more stringent. Furthermore, it is possible that certain wastes generated by Laramie Energy's natural gas and oil operations which are currently exempt from regulation as "hazardous wastes" may in the future be designated as "hazardous wastes" under RCRA or other applicable statutes and therefore be subject to more rigorous and costly disposal requirements.

Naturally Occurring Radioactive Materials ("NORM") are radioactive materials that accumulate on production equipment or area soils during oil and natural gas extraction or processing. Primary responsibility for NORM regulation has been a state function. Standards have been developed for worker protection; treatment, storage, and disposal of NORM waste; management of waste piles, containers, and tanks; and limitations upon the release of NORM-contaminated land for unrestricted use. We believe that our operations are in material compliance with all applicable NORM standards.

Our natural gas and oil properties have been operated by third parties that controlled the treatment of hydrocarbons or other solid wastes and the manner in which such substances may have been disposed or released. State and federal laws applicable to refineries and to natural gas and oil wastes and properties have gradually become stricter over time. Under these laws, we could be required to remove or remediate previously disposed wastes (including wastes disposed or released by prior owners or operators) or property contamination (including groundwater contamination by prior owners or operators) or to perform remedial operations to prevent future contamination.

Superfund

The Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), also known as the "Superfund" law, imposes liability, without regard to fault or the legality of the original conduct, on certain persons with respect to the release or threatened release of a "hazardous substance" into the environment. These persons include the current owner and operator of a site, any former owner or operator who operated the site at the time of a release, transporters, and persons that disposed or arranged for the disposal of hazardous substances at a site. CERCLA also authorizes the EPA and, in some cases, third parties to take actions in response to threats to the public health or the environment and to seek to recover from the responsible persons the costs of such action. State statutes impose similar liability.

Under CERCLA, the term "hazardous substance" does not include "petroleum, including crude oil or any fraction thereof," unless specifically listed or designated and the term does not include natural gas, NGLs, liquefied natural gas, or synthetic gas usable for fuel. While this "petroleum exclusion" lessens the significance of CERCLA to Laramie Energy's exploration and production operations, we may generate wastes that may fall within CERCLA's definition of a "hazardous substance" in the course of our ordinary refining and natural gas and oil operations. Although we and, to our knowledge, our predecessors have used operating and disposal practices that were standard in the industry at the time, “hazardous substances” may have been disposed or released on, under, or from the properties currently or historically owned or leased by us or on, under, or from other locations where these wastes have been taken for disposal. At this time, we do not believe that we have any liability associated with any Superfund site and we have not been notified of any claim, liability, or damages under CERCLA.

Oil Pollution Act

The Oil Pollution Act of 1990 (“OPA”) and regulations thereunder impose a variety of requirements on “responsible parties” related to the prevention of crude oil spills and liability for damages resulting from such spills in U.S. waters. A “responsible party” includes the owner or operator of a facility or vessel or the lessee or permittee of the area in which an offshore facility is located. While liability limits apply in some circumstances, few defenses exist to the liability imposed by the OPA. We are not aware of the occurrence of any action or event that would subject us to liability under OPA and we believe that compliance with OPA’s financial responsibility and other operating requirements will not have a material adverse effect on us.

Discharges and Marine Protection

The Clean Water Act (“CWA”) regulates the discharge of pollutants to waters of the U.S., including wetlands, and requires a permit for the discharge of pollutants, including petroleum, to such waters. Certain facilities that store or otherwise handle crude oil are required to prepare and implement Spill Prevention, Control, and Countermeasure and Facility Response Plans relating to the possible discharge of oil to surface waters. We are required to prepare and comply with such plans and to obtain and comply with discharge permits. We believe we are in substantial compliance with these requirements and that any noncompliance would not have a material adverse effect on us. The CWA also prohibits spills of oil and hazardous substances to waters of the U.S. in excess of levels set by regulations and imposes liability in the event of a spill.

Other statutes provide protection to animal and plant species. These laws and regulations may require the acquisition of a permit or other authorization before drilling or construction related to the oil and gas industry commences and may limit or prohibit construction, drilling, and other activities on certain lands lying within wilderness or wetlands and other protected areas and impose substantial liabilities for pollution resulting from our operations. For example, the Magnuson amendment to the Marine Mammal Protection Act may limit or restrict certain new oil terminals and oil-by-rail infrastructure in the state of Washington.

State laws further regulate discharges of pollutants to surface and groundwaters, require permits that set limits on discharges to such waters, and provide civil and criminal penalties and liabilities for spills to both surface and groundwaters. Some states have imposed regulatory requirements to respond to concerns related to potential for groundwater impact from oil and gas exploration and production. For example, the Colorado Oil and Gas Conservation Commission (“COGCC”) approved rules that require sampling of groundwater for hydrocarbons and other indicator compounds both before and after drilling.

Hydraulic Fracturing

Laramie Energy’s exploration and production activities may involve the use of hydraulic fracturing techniques to stimulate wells and maximize natural gas production. Some states and localities now regulate the utilization of hydraulic fracturing and other states and localities are in the process of developing, or are considering development of, such rules. A state ballot initiative was introduced in Colorado in 2018 that would have required oil and gas wells to be at least 2,500 feet from homes and other occupied buildings. This initiative was rejected, but similar legislative action could subject Laramie Energy’s drilling activities to new or enhanced federal, state, and/or local regulatory requirements, including requirements that could restrict the areas in which Laramie Energy is able to operate.

Air Emissions

Our refining operations and Laramie Energy’s exploration and production operations are subject to local, state, and federal regulations for the control of emissions from sources of air pollution. Administrative enforcement actions for failure to comply strictly with air regulations or permits may be resolved by payment of monetary fines and correction of any identified deficiencies. Alternatively, regulatory agencies could impose civil and criminal liability for non-compliance. An agency could require us to forgo construction or operation of certain air emission sources. We believe that we are in substantial compliance with air pollution control requirements.

Our refining business is subject to very significant state and federal air permitting and pollution control requirements, including some that are the subject of ongoing enforcement activities by the EPA as described in more detail below. The EPA continues to review and, in many cases, tighten ambient air quality standards, which standards, along with the advancement of pollution control technologies, could result in new regulatory and permit requirements that will impact our refining activities and involve additional costs.

On September 29, 2015, the EPA announced a final rule updating standards that control toxic air emissions from petroleum refineries, addressing, among other things, flaring operations, fenceline air quality monitoring, and additional emission reductions from storage tanks and delayed coking units. Compliance with this rule has not had a material impact on our financial condition, results of operations, or cash flows to date.

Coastal Coordination

There are various federal and state programs that regulate the conservation and development of coastal resources. The federal Coastal Zone Management Act ("CZMA") was passed to preserve and, where possible, restore the natural resources of the coastal zone of the U.S. The CZMA provides for federal grants for state management programs that regulate land use, water use, and coastal development.

Environmental Agreement

On September 25, 2013, Par Petroleum, LLC (formerly known as Hawaii Pacific Energy; a wholly owned subsidiary of Par created for purposes of acquiring Par Hawaii Refining, LLC (" PHR")), Tesoro, and PHR entered into an Environmental Agreement ("Environmental Agreement") that allocated responsibility for known and contingent environmental liabilities related to the acquisition of PHR, including the Consent Decree as described below.

Consent Decree

On July 18, 2016, PHR and subsidiaries of Tesoro entered into a consent decree with the EPA, the U.S. Department of Justice ("DOJ"), and other state governmental authorities concerning alleged violations of the federal CAA related to the ownership and operation of multiple facilities owned or formerly owned by Tesoro and its affiliates ("Consent Decree"), including the Par East refinery. As a result of the Consent Decree, PHR expanded its previously-announced 2016 Par East refinery turnaround to undertake additional capital improvements to reduce emissions of air pollutants and to provide for certain NOx and SO_2 emission controls and monitoring required by the Consent Decree.

Tesoro is responsible under the Environmental Agreement for directly paying, or reimbursing PHR, for all reasonable third-party capital expenditures incurred pursuant to the Consent Decree to the extent related to acts or omissions prior to the closing date of the acquisition of PHR. Tesoro is obligated to pay all applicable fines and penalties related to the Consent Decree. Through December 31, 2019, Tesoro has reimbursed us for $12.2 million of our total capital expenditures incurred in connection with the Consent Decree. As of December 31, 2019, all reimbursable capital expenditures incurred pursuant to the Consent Decree were collected. Net capital expenditures and reimbursements related to the Consent Decree are presented within Capital expenditures on our consolidated statement of cash flows for the years ended December 31, 2019, 2018, and 2017. Please read Note 16—Commitments and Contingencies to our consolidated financial statements under Item 8 of this Form 10-K for more information.

Indemnification

In addition to its obligation to reimburse us for capital expenditures incurred pursuant to the Consent Decree, Tesoro agreed to indemnify us for claims and losses arising out of related breaches of Tesoro's representations, warranties, and covenants in the Environment Agreement, certain defined "corrective actions" relating to pre-existing environmental conditions, third-party claims arising under environmental laws for personal injury or property damage arising out of, or relating to, releases of hazardous materials that occurred prior to the closing date of the PHR acquisition, any fine, penalty, or other cost assessed by a governmental authority in connection with violations of environmental laws by PHR prior to the closing date of the PHR acquisition, certain groundwater remediation work, fines, or penalties imposed on PHR by the Consent Decree related to acts or omissions of Tesoro prior to the closing date of the PHR acquisition, and claims and losses related to the Pearl City Superfund Site.

Tesoro's indemnification obligations are subject to certain limitations as set forth in the Environmental Agreement. These limitations include a deductible of $1 million and a cap of $15 million for certain of Tesoro's indemnification obligations related to certain pre-existing conditions as well as certain restrictions regarding the time limits for submitting notice and supporting documentation for remediation actions.

Other Government Regulation

Impact of Dodd-Frank Act Derivatives Regulation

The Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank Act"), which was passed by the U.S. Congress and signed into law in July 2010, contains significant derivatives regulation, including requirements that certain transactions be cleared on exchanges and that collateral (commonly referred to as "margin") be posted for such transactions. The Dodd-Frank Act provides for a potential exception from these clearing and collateral requirements for commercial end users and it includes a number of defined terms used in determining how this exception applies to particular derivative transactions and the parties to those transactions. As required by the Dodd-Frank Act, the Commodities Futures and Trading Commission ("CFTC") has promulgated numerous rules to define these terms. The CFTC has re-proposed new rules that would place limits on certain core futures and equivalent swap contracts for or linked to certain physical commodities, subject to exceptions for certain bona fide hedging transactions. As these new positions limit rules are not yet final, the impact of those provisions on us is uncertain at this time.

It is possible that the CFTC, in conjunction with prudential regulators, may mandate that financial counterparties entering into swap transactions with end users must do so with credit support agreements in place, which could result in negotiated credit thresholds above which an end user must post collateral. If this should occur, we intend to manage our credit relationships to minimize collateral requirements.

The CFTC's final rules may also have an impact on our counterparties. For example, our bank counterparties may be required to post collateral and assume compliance burdens resulting in additional costs. We expect that much of the increased costs could be passed on to us, thereby decreasing the relative effectiveness of our hedges and our profitability. To the extent we incur increased costs or are required to post collateral, there could be a corresponding decrease in amounts available for our capital investment program.

OSHA

We are subject to the requirements of the federal Occupational Safety and Health Act ("OSHA") and comparable state statutes. The OSHA hazard communication standard, the EPA community right-to-know regulations under Title III of the federal Superfund Amendments and Reauthorization Act, and similar state statutes require us to organize and/or disclose information about hazardous materials used or produced in our operations. Certain of this information must be provided to employees, state and local governmental authorities, and local citizens.

SIGNIFICANT CUSTOMERS

We sell a variety of refined products to a diverse customer base. The majority of our refined products are primarily sold through short-term contracts or on the spot market. For the year ended December 31, 2017, we had one customer in our refining segment that accounted for 10% of our consolidated revenues. No other customer accounted for more than 10% of our consolidated revenues during the years ended December 31, 2019, 2018, and 2017.

EMPLOYEES

At December 31, 2019, we employed 1,408 people, 260 of whom are covered by collective bargaining agreements. At our Par East and Washington refineries, 224 employees are represented by the United Steelworkers Union ("USW") with collective bargaining agreements expiring on January 31, 2022. At our Par West refinery, 36 employees are represented by the International Brotherhood of Electrical Workers ("IBEW") with a collective bargaining agreement expiring on December 31, 2020; we plan to engage in negotiations for a new extension of the collective bargaining agreement. We consider our relations with our represented and non-represented employees to be satisfactory.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

Certain statements in this Annual Report on Form 10-K may constitute "forward-looking" statements as defined in Section 27A of the Securities Act of 1933 (the "Securities Act"), Section 21E of the Securities Exchange Act of 1934 (the "Exchange Act"), the Private Securities Litigation Reform Act of 1995 ("PSLRA"), or in releases made by the SEC, all as may be amended from time to time. Such forward-looking statements involve known and unknown risks, uncertainties, and other important factors that could cause our actual results, performance, or achievements to differ materially from any future results, performance, or achievements expressed or implied by such forward-looking statements. Statements that are not historical fact are forward-looking statements. Forward-looking statements can be identified by, among other things, the use of forward-looking language, such as the words "plan," "believe," "expect," "anticipate," "intend," "estimate," "project," "may," "will," "would," "could," "should," "seeks," or "scheduled to," or other similar words or the negative of these terms or other variations of these terms or comparable language or by discussion of strategy or intentions. These cautionary statements are being made pursuant to the Securities Act, the Exchange Act, and the PSLRA with the intention of obtaining the benefits of the "safe harbor" provisions of such laws.

The forward-looking statements contained in this Annual Report on Form 10-K are largely based on our expectations, which reflect estimates and assumptions made by our management. These estimates and assumptions reflect our best judgment based on currently known market conditions and other factors. Although we believe such estimates and assumptions to be reasonable, they are inherently uncertain and involve a number of risks and uncertainties that are beyond our control. In addition, management's assumptions about future events may prove to be inaccurate. All readers are cautioned that the forward-looking statements contained in this Annual Report on Form 10-K are not guarantees of future performance and we cannot assure any reader that such statements will be realized or that the forward-looking events and circumstances will occur. Actual results may differ materially from those anticipated or implied in the forward-looking statements due to factors described in "Item 1A. — Risk Factors", "Item 7. — Management's Discussion and Analysis of Financial Condition and Results of Operations," and elsewhere in this Annual Report on Form 10-K. All forward-looking statements speak only as of the date they are made. We do not intend to update or revise any forward-looking statements as a result of new information, future events, or otherwise. These cautionary statements qualify all forward-looking statements attributable to us or persons acting on our behalf.

Item 1A. RISK FACTORS

Our businesses involve a high degree of risk. You should consider and read carefully the risks and uncertainties described below together with all of the other information contained in this Annual Report on Form 10-K. If any of the following risks, or any risk described elsewhere in this Annual Report on Form 10-K, actually occur, our business, prospects, financial condition, results of operations, or cash flows could be materially adversely affected. In any such case, the trading price of our common stock could decline. The risks described below are not the only ones facing our company. Additional risks not currently known to us or that we currently deem immaterial may also adversely affect us.

OPERATING RISKS

Our operations are subject to operational hazards that could expose us to potentially significant losses.

Our operations are subject to potential operational hazards and risks inherent in refining operations, in transporting and storing crude oil and refined products, and in producing natural gas and oil. Any of these risks, such as fires, explosions, maritime disasters, security breaches, pipeline ruptures and spills, mechanical failure of equipment, and severe weather and natural disasters at our or third-party facilities could result in business interruptions or shutdowns and damage to our properties and the properties of others. A serious accident at our facilities could also result in serious injury or death to our employees or contractors and could expose us to significant liability for personal injury claims and reputational risk. Any such event or unplanned shutdown could have a material adverse effect on our business, financial condition, and results of operations.

The volatility of crude oil prices and refined product prices and changes in the demand for such products may have a material adverse effect on our cash flow and results of operations.

Earnings and cash flows from our refining segment depend on a number of factors, including to a large extent the cost of crude oil and other refinery feedstocks which has fluctuated significantly in recent years. While prices for refined products are influenced by the price of crude oil, the constantly changing margin between the price we pay for crude oil and other refinery feedstocks and the prices we receive for refined products, the crack spread, also fluctuates significantly. The prices we pay and prices we receive depend on numerous factors beyond our control, including the global supply and demand for crude oil, gasoline, and other refined products, which are subject to, among other things:

- changes in the global economy and the level of foreign and domestic production of crude oil and refined products;
- availability of crude oil and refined products and the infrastructure to transport crude oil and refined products;
- local factors, including market conditions, the level of operations of other refineries in our markets, and the volume and price of refined products imported;
- threatened or actual terrorist incidents, acts of war, and other global political conditions;
- changes in the availability or cost of maritime shipping;
- pandemics, public health crises, or other widespread emergencies such as the novel coronavirus (COVID-19);
- government regulations or mandated production curtailments or limitations; and
- weather conditions, hurricanes, or other natural disasters.

For example, the Organization of the Petroleum Exporting Countries, or OPEC, has periodically cut production to support crude oil prices. And the Alberta government has previously mandated crude oil production cuts in a region where our Washington refinery sources crude oil. Such an action, or any similar actions, could result in an increase in the price we pay for crude oil, which may result in a decrease in the expected earnings and cash flows generated by our refining business.

In addition, we purchase our refinery feedstocks before manufacturing and selling the refined products. Price level changes during the periods between purchasing and selling these refined products could also have a material adverse effect on our business, financial condition, and results of operations.

Instability in the global economic and political environment can lead to volatility in the cost and availability of crude oil and prices for refined products, which could adversely impact our results of operations.

Instability in the global economic and political environment can lead to volatility in the cost and availability of crude oil and in the price and demand for refined products. This may place downward pressure on our results of operations. This is particularly true of developments in and relating to oil-producing countries, including terrorist activities, military conflicts, embargoes, internal instability, or actions or reactions of the U.S. or foreign governments in anticipation of, or in response to, such developments. Any such events may limit or disrupt markets, which could negatively impact our ability to access global crude oil commodity flows or sell our refined products.

Many of our refined products could cause serious injury or death if mishandled or misused by us or our purchasers, or if defects occur during manufacturing.

While we produce, store, transport, and deliver all of our refined products in a safe manner, many of our refined products are highly flammable or explosive and could cause significant damage to persons or property if mishandled. Defects in our products (such as gasoline or jet fuel) or misuse by us or by end purchasers could lead to fatalities or serious damage to property. We may be held liable for such occurrences, which could have a material adverse effect on our business and results of operations.

Our business is impacted by increased risks of spills, discharges, or other releases of petroleum or hazardous substances in our refining and logistics operations.

The operation of refineries, pipelines, and refined products terminals is subject to increased risks of spills, discharges, or other inadvertent releases of petroleum or hazardous substances, and we operate in and around environmentally sensitive coastal waters that are closely regulated and monitored. These events could occur in connection with the operation of our refineries, pipelines, or refined products terminals. If any of these events occur, or is found to have previously occurred, we could be liable for costs and penalties associated with their remediation under federal, state, and local environmental laws or common law, and could be liable for property damage to third parties caused by contamination from releases and spills. The penalties and clean-up costs that we may have to pay for releases or the amounts that we may have to pay to third parties for damages to their property could be significant and have a material adverse effect on our business, financial condition, or results of operations.

Our operations, including the operation of underground storage tanks, are also subject to the risk of environmental litigation and investigations which could affect our results of operations.

From time to time, we may be subject to litigation or investigations with respect to environmental and related matters, the costs of which could be material. We operate fueling stations with underground storage tanks used primarily for storing and dispensing refined fuels. In addition, some fueling stations where we sell fuel are owned or operated by third parties who are not under our control. Federal and state regulations and legislation govern the storage tanks and compliance with these requirements can be costly. The operation of underground storage tanks poses certain risks, including leaks. Leaks from underground storage tanks, which may occur at one or more of our fueling stations, may impact soil or groundwater and could result in fines or civil liability for us.

Our insurance coverage may be inadequate to protect us from the liabilities that could arise in our business.

We carry property, casualty, business interruption, and other lines of insurance, but we do not maintain insurance coverage against all potential losses. Marine vessel charter agreements do not include indemnity provisions for oil spills so we also carry marine charterer's liability insurance. We could suffer losses for uninsurable or uninsured risks or in amounts in excess of existing insurance coverage. Claims covered by insurance are subject to deductibles, the aggregate amount of which could be material. Insurance policies are also subject to compliance with certain conditions, the failure of which could lead to a denial of coverage as to a particular claim or the voiding of a particular insurance policy. There also can be no assurance that existing insurance coverage can be renewed at commercially reasonable rates or that available coverage will be adequate to cover future claims. The occurrence of an event that is not fully covered by insurance or failure by one or more insurers to honor its coverage commitments for an insured event could have a material adverse effect on our business, financial condition, and results of operations.

We are subject to interruptions of supply and increased costs as a result of our reliance on third-party transportation of crude oil and refined products to and from our refineries.

Our refineries receive and transport crude oil and refined products via tankers, barges, pipelines, and railcars. In addition to environmental risks, we could experience an interruption of supply or an increased cost to deliver refined products to market if such transportation is disrupted because of adverse weather, accidents, governmental regulation or sanctions, or third-party action. A prolonged disruption could have a material adverse effect on our business, financial condition, and results of operations.

The financial and operating results of our refineries, including the products they refine and sell, can be seasonal.

Demand for gasoline in the Rockies and Northwest United States is generally higher during the summer months than during the winter months due to seasonal increases in highway traffic. The Wyoming and Washington refineries' financial and operating results for the first and fourth calendar quarters may be lower than those for the second and third calendar quarters of each year as a result of this seasonality. Conversely, the demand for the products the Hawaii refineries refine and sell, and the financial and operating results for the Hawaii refineries, are often strongest in the first and fourth calendar quarters.

We rely upon certain critical information systems for the operation of our business and the failure of any critical information system, including a cyber security breach, may result in harm to our business.

We are heavily dependent on our technology infrastructure and maintain and rely upon certain critical information systems for the effective operation of our business. These information systems include data network and telecommunications, internet access and our websites, and various computer hardware equipment and software applications, including those that are critical to the safe operation of our refineries and our pipelines and terminals. Our retail business collects certain customer data, including credit card numbers, for business purposes. The integrity and protection of our customer, employee, and company data is critical to our business.

Our information systems are subject to damage or interruption from a number of potential sources including natural disasters, software viruses or other malware, power failures, cyber attacks, and other events. To the extent that these information systems are under our control, we have implemented measures, such as virus protection software and intrusion detection systems, to address the outlined risks. However, security measures for information systems cannot be guaranteed to be failsafe. Any compromise of our data security or our inability to use or access these information systems at critical points in time could unfavorably impact the timely and efficient operation of our business and subject us to additional costs and liabilities, which could adversely affect our business, financial condition, and results of operations. Finally, federal legislation relating to cyber security threats could impose additional requirements on our operations.

Through our investment in Laramie Energy, we are subject to all of the risks of natural gas and oil exploration and production, but we lack the ability to control Laramie Energy's operations.

Through our investment in Laramie Energy, we are exposed to all of the risks inherent in natural gas and oil exploration and production, including the risks that:

- exploration and development drilling may not result in commercially productive reserves;
- the operator may act in ways contrary to our best interest;
- the marketability of our natural gas products depends mostly on the availability, proximity, and capacity of natural gas gathering systems, pipelines, and processing facilities, which are owned by third parties, as well as adequate water supplies;
- we have no long-term contracts to sell natural gas or oil;
- compliance with environmental and other governmental regulatory or legislative requirements could result in increased costs of operation or curtailment, delay, or cancellation of development and producing operations; and
- a decline in demand for natural gas and oil could adversely affect our financial condition and results of operations.

Our ability to extract value from our investment in Laramie Energy is limited.

The ability of Laramie Energy to make distributions to its owners, including us, is currently prohibited by the terms of Laramie Energy's credit facility and the terms of its limited liability company agreement. Further, if Laramie is not able to negotiate an extension on the maturity date of its credit facility, currently set to mature in December 2020, Laramie's independent auditor's opinion may contain a going concern qualification, which means that Laramie's auditor believes there is substantial doubt that Laramie can continue as an on-going business for the next 12 months without such extension or additional financing.

Information concerning our natural gas and oil reserves is uncertain.

There are numerous uncertainties inherent in estimating quantities of proved reserves and cash flows from such reserves, including factors beyond our control. Reserve engineering is a subjective process of estimating underground accumulations of natural gas and crude oil that cannot be measured in an exact manner. The accuracy of an estimate of quantities of natural gas and crude oil reserves, or of cash flows attributable to such reserves, is a function of the available data, assumptions regarding future natural gas and crude oil prices, availability and terms of financing, expenditures for future development and exploitation activities, and engineering and geological interpretation and judgment. Reserves and future cash flows may also be subject to material downward or upward revisions based upon production history, development and exploitation activities, natural gas and crude oil prices, and regulatory changes. Actual future production, revenue, taxes, development expenditures, operating expenses, quantities of recoverable reserves, and value of cash flows from those reserves may vary significantly from our assumptions and estimates. In addition, reserve engineers may make different estimates of reserves and cash flows based on the same data. These uncertainties may inhibit our ability to finance development of our reserves in the future.

The estimated quantities of proved reserves and the discounted present value of future net cash flows attributable to those reserves as of December 31, 2019, included herein, were prepared by independent reserve engineers in accordance with the rules of the SEC and are not intended to represent the fair market value of such reserves. As required by the SEC, the estimated discounted present value of future net cash flows from proved reserves is generally based on prices and costs on the date of the estimate, while actual future prices and costs may be materially higher or lower. In addition, the 10% discount factor the SEC requires to be used to calculate discounted future net revenues for reporting purposes is not necessarily the most appropriate discount factor based on the cost of capital in effect from time to time and risks associated with our business and the natural gas and oil industry in general.

Under current SEC requirements, subject to limited exceptions, proved undeveloped reserves may only be booked if they relate to wells scheduled to be drilled and developed within five years of the date of booking. This rule may limit our potential to book additional proved undeveloped reserves we own indirectly through our equity investment in Laramie Energy. Moreover, we may be required to write down our proved undeveloped reserves we own indirectly through our equity investment in Laramie Energy, or we may be required to write down previously disclosed proved undeveloped reserves, if Laramie Energy does not drill and develop those reserves within the required five-year time frame.

REGULATORY RISK

Meeting the requirements of evolving environmental, health, and safety laws and regulations, including those related to climate change and marine protection, could adversely affect our performance.

Consistent with the experience of other U.S. refineries, environmental laws and regulations have raised operating costs and may require significant capital investments at our refineries. We may be required to address conditions that may be discovered in the future and require a response. Potentially material expenditures could be required in the future as a result of evolving environmental, health, and safety and energy laws, regulations, or requirements that may be adopted or imposed in the future. Future developments in federal and state laws and regulations governing environmental, health and safety, and energy matters are especially difficult to predict.

Currently, multiple legislative and regulatory measures to address GHG emissions (including CO_2, methane, and NO_X) are in various phases of consideration, promulgation, or implementation. These include actions to develop national, statewide, or regional programs, each of which could require reductions in our GHG emissions. Requiring reductions in our GHG emissions could result in increased costs to (i) operate and maintain our facilities, (ii) install new emission controls at our facilities, and/or (iii) administer and manage any GHG emissions programs, including acquiring emission credits or allotments. Requiring reductions in our GHG emissions and increased use of renewable fuels which can be supplied by producers and marketers in other industries that supply alternative forms of energy and fuels to satisfy the requirements of our industrial, commercial, and individual customers could also decrease the demand for our refined products, and could have a material adverse impact on our business, financial condition, and results of operations.

Additionally, legislation designed to protect animal and plant species, such as the Magnuson amendment to the Marine Mammal Protection Act, may limit or restrict our ability to construct or expand new oil terminals and oil-by-rail infrastructure in the state of Washington, which could have a material impact on our business, financial condition, and results of operations.

Renewable fuels mandates may reduce demand for the petroleum fuels we produce, which could have a material adverse effect on our business results of operations and financial condition.

The EPA has issued RFS mandates, requiring refiners such as us to blend renewable fuels into the petroleum fuels we produce and sell in the U.S. During 2019, we received a $3.4 million and $1.9 million benefit and incurred a $5.7 million expense for RINs purchases for our Hawaii, Wyoming, and Washington refineries, respectively. On December 19, 2019, the EPA issued final volume mandates for the year 2020 and biomass-based diesel for 2021. All but biomass-based diesel are below the statutory mandates, with biomass-based diesel significantly greater than the statutory floor of 1.0 billion gallons. We expect to incur costs of approximately $10 to $20 million due to renewable volume obligations in 2020 for our refineries, which amount will be offset by RINs generated by our refineries to the extent we blend renewable fuels into our fuels. In addition, as a result of the annual volume mandates, we may experience a decrease in demand for refined products due to refined products being replaced by renewable fuels.

Ongoing litigation regarding the standards for 2017, 2018, and 2019 creates some potential that the final volumes of renewable fuels that the EPA established will be revised for one or more of those years. In addition, the EPA is considering changes to the existing RFS program regulations and other regulatory initiatives under the RFS program that could impact future standards. Although uncertain, any of these events may cause the price of RINs to rise and result in additional costs in connection with RFS compliance for 2017, 2018, and 2019, costs that exceed our estimates in connection with RFS compliance for 2020, and/or increased compliance costs in future years. Such increased costs could be material and may have a material adverse impact on our business, financial condition, and results of operations. Finally, while there is no current regulatory standard that authenticates RINs that may be purchased on the open market from third parties, we believe that the RINs we purchase are from reputable sources, are valid, and serve to demonstrate compliance with applicable RFS requirements. However, if this belief proves incorrect and the RINs that we purchase are not valid or in compliance with applicable RFS requirements, our financial condition and cash flows may be adversely affected.

Several states, including Washington and Hawaii, have pursued or are considering initiatives designed to reduce the carbon intensity of the transportation sector by encouraging increased use of renewable fuels or electric vehicles or by requiring reductions in transportation fuel-related GHG emissions in the state. Since 2006, the State of Washington has required that denatured ethanol make up at least 2% of total gasoline sold in the state and that biodiesel comprise at least 2% of total diesel sold in the state, and the Washington Department of Ecology is authorized to increase these requirements if certain conditions are met. Although the Washington State Legislature failed to pass a clean fuels program that would have limited GHG emissions per unit of transportation fuel energy, the State of Washington continues to pursue additional clean fuels legislation, including a stringent low carbon fuel standard. In 2014, the State of Hawaii signed a memorandum of understanding with the U.S. Department of Energy to collaborate to produce 70% of the state's energy needs from energy-efficient and renewable sources by 2030 and 100% of the state's energy needs from energy-efficient and renewable sources by 2045. In addition, Hawaii's alternative fuels standard requires the State to facilitate the development of alternate fuels so such fuels provide 20% of highway fuel demand by 2020 and 30% by 2030. These state programs could increase the cost of consuming, and thereby reduce demand for, our refined petroleum products, which could have a material adverse effect on our business, results of operations, and financial condition.

Potential legislative and regulatory actions addressing climate change could increase our costs, reduce our revenue and cash flow from natural gas and oil sales, or otherwise alter the way we conduct our business.

Currently, multiple legislative and regulatory measures to address GHG, including CO_2, methane and NO_X, and other emissions are in various phases of consideration, promulgation or implementation at various levels of the federal and state government. These include actions to develop international, federal, regional or statewide programs, which could require reductions in our GHG or other emissions, establish a carbon tax and decrease the demand for our refined products. Requiring reductions in these emissions could result in increased costs to (i) operate and maintain our facilities, (ii) install new emission controls at our facilities, and (iii) administer and manage any emissions programs, including acquiring emission credits or allotments.

For example, in 2015, the U.S., Canada, and the U.K. participated in the United Nations Conference on Climate Change, which led to the creation of the Paris Agreement. The Paris Agreement, which was signed by the U.S. in April 2016, requires countries to review and "represent a progression" in their intended nationally determined contributions (which set GHG emission reduction goals) every five years beginning in 2020. In November 2019, the current U.S. administration served notice on the United Nations that the U.S. would withdraw from the Paris Agreement in 2020. There are no guarantees that the Paris Agreement will not be re-implemented in the U.S. or re-implemented in part by specific U.S. states or local governments. Restrictions on emissions of methane or carbon dioxide that have been or may be imposed in various U.S. states, at the U.S. federal level, or in other countries could adversely affect the oil and gas industry.

The EPA has issued a notice of finding and determination that emissions of CO2, methane, and other GHGs present an endangerment to human health and the environment. In response, the EPA has adopted regulations under existing provisions of the federal Clean Air Act that, among other things, establish Prevention of Significant Deterioration ("PSD") construction and Title V operating permit program requiring reviews for GHG emissions from certain large stationary sources. Facilities required to obtain PSD permits for their GHG emissions will also be required to meet "best available control technology" standards, which will be established by the states or, in some instances, by the EPA on a case-by-case basis. In addition, the EPA has adopted rules requiring the monitoring and reporting of GHG emissions from specified large GHG emission sources in the U.S., including petroleum refineries and certain onshore petroleum and natural gas production activities, on an annual basis. We monitor for GHG emissions at our refineries and believe we are in substantial compliance with the applicable GHG reporting requirements. Certain of the third-party drilling and production entities in which we hold a working interest also may be subject to reporting of GHG emissions in the U.S. These EPA policies and rulemakings could adversely affect our operations and restrict or delay our ability to obtain air permits for new or modified facilities.

In addition, from time to time, the U.S. Congress has considered and may in the future consider and adopt "cap and trade" legislation that would establish an economy-wide cap on GHG emissions in the U.S. and would require most sources of GHG emissions to obtain emission "allowances" corresponding to their annual GHG emissions. For those GHG sources that are unable to meet the required limitations, such legislation could impose substantial financial burdens. Any laws or regulations that may be adopted to restrict or reduce GHG emissions would likely require us to incur increased operating costs and could have an adverse effect on demand for our production. The adoption of any legislation or regulations that limits emissions of GHG from our or such drilling and production entities' facilities, equipment, and operations could require us or such entities to incur costs to reduce emissions of GHG associated with our or such entities' operations or could adversely affect demand for the refined petroleum products that we produce or the crude oil or natural gas that such drilling and production entities in which we hold a working interest produce.

At the state level, the State of Hawaii has announced its intention to reduce statewide GHG emissions to 1990 levels by 2020. Other states, including Washington, are proposing, or have already promulgated, low carbon fuel standards or similar initiatives to reduce emissions from the transportation sector. We could also face increased climate-related litigation with respect to our operations or products. If we are unable to pass the costs of compliance on to our customers, sufficient credits are unavailable for purchase, we have to pay a significantly higher price for credits, or if we are otherwise unable to meet our compliance obligation, our financial condition and results of operations could be adversely affected.

Federal, regional, and state climate change and air emissions goals and regulatory programs are complex, subject to change, and create uncertainty due to a number of factors including technological feasibility, legal challenges, and potential changes in federal policy. Nevertheless, stricter regulation can be expected in the future and any of these or similar changes may have a material adverse impact on our business, results of operations, and financial condition.

Regulatory and other requirements concerning the transportation of crude oil and other commodities by rail may cause increases in transportation costs or limit the amount of crude oil that we can transport by rail.

We rely on a variety of systems to transport crude oil, including rail. Rail transportation is regulated by federal, state, and local authorities. New regulations or changes in existing regulations could result in increased compliance expenditures. For example, in 2019 Washington enacted a law that limits crude oil by rail deliveries through a cap on off-loadings from existing facilities and new specifications regarding the vapor pressure of crudes permitted to be shipped through the state. These or other regulations that require the reduction of volatile or flammable constituents in crude oil that is transported by rail, change the design or standards for rail cars used to transport the crude oil we purchase, change the routing or scheduling of trains carrying crude oil, or require any other changes that detrimentally affect the economics of delivering North American crude oil by rail, could increase the time required to move crude oil from production areas to our refineries, increase the cost of rail transportation, and decrease the efficiency of shipments of crude oil by rail within our operations. Any of these outcomes could have a material adverse effect on our business, results of operations, and financial condition.

In connection with the WRC Acquisition, we will be required to undertake significant remediation and other corrective actions with respect to certain environmental matters.

In connection with the July 14, 2016 purchase of Hermes Consolidated, LLC (d/b/a Wyoming Refining Company) and, indirectly, Wyoming Refining Company's wholly owned subsidiary, Wyoming Pipeline Company, LLC (collectively, "Wyoming Refining" or "WRC") (the "WRC Acquisition"), there are several environmental conditions that will require us to undertake significant remediation efforts and other corrective actions. The Wyoming refinery is subject to a number of consent decrees, orders, and settlement agreements involving the EPA and/or the Wyoming Department of Environmental Quality, some of which date back to the late 1970s and several of which remain in effect, requiring further actions at the Wyoming refinery.

As is typical of older, small refineries like the Wyoming refinery, the largest cost component arising from these various decrees relates to the investigation, monitoring, and remediation of soil, groundwater, surface water, and sediment contamination associated with the facility's historic operations. Investigative work by Wyoming Refining and negotiations with the relevant agencies as to remedial approaches remain ongoing on a number of aspects of the contamination, meaning that investigation, monitoring, and remediation costs are not reasonably estimable for some elements of these efforts. As of December 31, 2019, we have accrued $16.5 million for the well-understood components of these efforts based on current information, approximately one-third of which we expect to incur in the next five years and the remainder to be incurred over approximately 30 years.

Additionally, we believe the Wyoming refinery will need to modify or close a series of wastewater impoundments in the next several years and to replace those impoundments with a new wastewater treatment system. Based on current information, reasonable estimates we have received suggest costs of approximately $11.6 million to design and construct a new wastewater treatment system.

Finally, among the various historic consent decrees, orders, and settlement agreements into which the Wyoming refinery has entered, there are several penalty orders associated with exceedances of permitted limits by the Wyoming refinery's wastewater discharges. The frequency of these exceedances appears to be declining over time, but we may become subject to new penalty enforcement action in the future.

We may incur significant costs and liabilities resulting from performance of pipeline integrity programs and related repairs.

PHMSA has established a series of rules requiring pipeline operators to develop and implement integrity management programs for hazardous liquid pipelines that, in the event of a pipeline leak or rupture, could affect high consequence areas ("HCAs"), which are areas where a release could have the most significant adverse consequences, including high-population areas, certain drinking water sources, and unusually sensitive ecological areas. These regulations require operators of covered pipelines to:

- perform ongoing assessments of pipeline integrity;
- identify and characterize applicable threats to pipeline segments that could impact an HCA;

- improve data collection, integration, and analysis;
- repair and remediate the pipeline as necessary; and
- implement preventive and mitigating actions.

In addition, certain states have also adopted regulations similar to existing PHMSA regulations for intrastate gathering and transmission lines. These requirements could require us to install new or modified safety controls, pursue additional capital projects, or conduct maintenance programs on an accelerated basis, any or all of which tasks could result in us incurring increased operating costs that could be significant and have a material adverse effect on our financial position or results of operations.

Moreover, changes to pipeline safety laws by Congress and regulations by PHMSA that result in more stringent or costly safety standards could result in our incurring increased operating costs that could have a material adverse effect on our financial position or results of operations.

BUSINESS RISKS

The locations of our refineries and related assets in certain limited geographic areas create an exposure to localized economic risks.

Because of the locations of our refineries in Hawaii, Washington, and Wyoming, we primarily market our refined products in relatively limited geographic areas. As a result, we are more susceptible to regional economic conditions than the operations of more geographically diversified competitors and any unforeseen events or circumstances that affect our operating areas could also materially adversely affect our revenues and our business and operating results. These factors include, among other things, changes in the economy, weather conditions, demographics and population, increased supply of refined products from competitors, and reductions in the supply of crude oil.

We must make substantial capital expenditures at our refineries and related assets to maintain their reliability and efficiency. If we are unable to complete capital projects at their expected costs or in a timely manner, or if the market conditions assumed in our project economics deteriorate, our financial condition, results of operations, or cash flows could be adversely affected.

Our refineries and related assets have been in operation for many years. Equipment, even if properly maintained, may require significant capital expenditures and expenses to keep the refineries operating at optimum efficiency. These costs do not result in increases in unit capacities, but rather are focused on trying to maintain safe, reliable operations.

Delays or cost increases related to the engineering, procurement, and construction of new facilities, or improvements and repairs to our existing facilities and equipment, could have a material adverse effect on our business, financial condition, or results of operations. Such delays or cost increases may arise as a result of unpredictable factors in the marketplace, many of which are beyond our control, including:

- denial or delay in obtaining regulatory approvals and/or permits;
- difficulties in executing the capital projects;
- unplanned increases in the cost of equipment, materials, or labor;
- disruptions in transportation of equipment and materials;
- severe adverse weather conditions, natural disasters, or other events (such as equipment malfunctions, explosions, fires, or spills) affecting our facilities, or those of our vendors and suppliers;
- shortages of sufficiently skilled labor, or labor disagreements resulting in unplanned work stoppages;
- market-related increases in a project’s debt or equity financing costs; and/or
- non-performance or force majeure by, or disputes with, our vendors, suppliers, contractors, or sub-contractors.

Any one or more of these occurrences noted above could have a significant impact on our business. If we are unable to make up the delays or to recover the related costs, or if market conditions change, it could materially and adversely affect our financial position, results of operations, or cash flows.

The retail market is diverse and highly competitive. Aggressive competition and the development of alternative fuels could adversely impact our business.

We face strong competition in the market for the sale of retail gasoline, diesel fuel, and merchandise. Our competitors include outlets owned or operated by fully integrated major oil companies or their dealers and other well-recognized national or regional retail outlets, often selling products at very competitive prices. We compete with a number of integrated national and international oil companies who produce crude oil, some of which is used in their refining operations. Unlike these oil companies, we must purchase all of our crude oil from unaffiliated sources. Because these oil companies benefit from increased commodity prices, have greater access to capital, and have stronger capital structures, they are able to better withstand poor and volatile market conditions, such as a lower refining margin environment, shortages of crude oil and other feedstocks, or extreme price fluctuations.

Additionally, non-traditional retailers such as supermarkets, club stores, and mass merchants are also in the retail business, and these non-traditional gasoline retailers have obtained a significant share of the transportation fuels market. These retailers may use integration of operations, greater financial resources, promotional pricing or discounts, or other advantages to withstand volatile market conditions or levels of no or low profitability. The development of alternative and competing fuels in the retail market could also adversely impact our business. Increased competition from these alternatives as a result of governmental regulations, technological advances, and consumer demand could have an impact on pricing and demand for our products and our profitability.

If we are unable to obtain crude oil supplies for our refineries without the benefit of certain intermediation agreements, the capital required to finance our crude oil supply could negatively impact our liquidity.

All of the crude oil delivered at our Hawaii refineries is subject to our Supply and Offtake Agreements with J. Aron and certain deliveries of crude oil at our Washington refinery are subject to the Washington Refinery Intermediation Agreement (together, the "Intermediation Agreements"). If we are unable to obtain our crude oil supply for our refineries under these agreements, our exposure to crude oil pricing risks may increase as the number of days between when we pay for the crude oil and when the crude oil is delivered to us increases. Such increased exposure could negatively impact our liquidity position due to the increase in working capital used to acquire crude oil inventory for our refineries.

The Intermediation Agreements expose us to counterparty credit and performance risk.

We have Supply and Offtake Agreements with J. Aron, pursuant to which J. Aron will intermediate crude oil supplies and refined product inventories at our Hawaii refineries. J. Aron will own all of the crude oil in our tanks and substantially all of our refined product inventories prior to our sale of the inventories. Upon termination of the Supply and Offtake Agreements, which may be terminated by J. Aron as early as May 31, 2021, we are obligated to repurchase all crude oil and refined product inventories then owned by J. Aron and located at the specified storage facilities at then current market prices. This repurchase obligation could have a material adverse effect on our business, results of operations, or financial condition. We also have the Washington Refinery Intermediation Agreement with MLC whereby our Washington refinery purchases certain crude oil supplies from third-party suppliers and MLC provides credit support for such purchases in exchange for our pledge of all crude oil and refined products inventories from such refinery. An adverse change in the business, results of operations, liquidity, or financial condition of our intermediation counterparties could adversely affect the ability of such counterparties to perform their obligations, which could consequently have a material adverse effect on our business, results of operations, or liquidity and, as a result, our business and operating results.

Inadequate liquidity could materially and adversely affect our business operations in the future.

If our cash flow and capital resources are insufficient to fund our obligations, we may be forced to reduce our capital expenditures, seek additional equity or debt capital, or restructure our indebtedness. We cannot assure you that any of these remedies could, if necessary, be affected on commercially reasonable terms, or at all. Our liquidity is constrained by our need to satisfy our obligations under our debt agreements and the Intermediation Agreements. The availability of capital when the need arises will depend upon a number of factors, some of which are beyond our control. These factors include general economic and financial market conditions, the crack spread, natural gas and crude oil prices, our credit ratings, interest rates, market perceptions of us or the industries in which we operate, our market value, and our operating performance. We may be unable to execute our long-term operating strategy if we cannot obtain capital from these or other sources when the need arises.

Our ability to generate cash and repay our indebtedness or fund capital expenditures depends on many factors beyond our control and any failure to do so could harm our business, financial condition, and results of operations.

Our ability to fund future capital expenditures and repay our indebtedness when due will depend on our ability to generate sufficient cash flow from operations, borrowings under our debt agreements, and distributions from our subsidiaries. To a certain extent, this is subject to general economic, financial, competitive, legislative, and regulatory conditions and other factors that are beyond our control, including the crack spread.

We cannot assure you that our businesses will generate sufficient cash flow from operations, that our subsidiaries can or will make sufficient distributions to us, or that future borrowings will be available to us in an amount sufficient to repay our indebtedness or fund our other liquidity needs. If our cash flow and capital resources are insufficient to fund our needs, we may be forced to reduce our planned capital expenditures, sell assets, seek additional equity or debt capital, or restructure our debt. We cannot assure you that any of these remedies could, if necessary, be affected on commercially reasonable terms, or at all, which could cause us to default on our obligations and could impair our liquidity.

Our substantial level of indebtedness could adversely affect our financial condition.

We have a substantial amount of indebtedness, which requires significant interest payments. As of December 31, 2019, we had $611.9 million of indebtedness and Interest expense and financing costs, net for the year ended December 31, 2019 was $74.8 million.

Our substantial level of indebtedness could have important consequences, including the following:

- we must use a substantial portion of our cash flow from operations to pay interest and principal on our indebtedness and obligations under the Intermediation Agreements, which reduces funds available to us for other purposes, such as working capital, capital expenditures, other general corporate purposes, and potential acquisitions;
- our ability to refinance such indebtedness or to obtain additional financing for working capital, capital expenditures, acquisitions, or general corporate purposes may be impaired;
- our leverage may be greater than that of some of our competitors, which may put us at a competitive disadvantage and reduce our flexibility in responding to current and changing industry and financial market conditions;
- we may be more vulnerable to economic downturns and adverse developments in our business; and
- we may be unable to comply with financial and other restrictive covenants in our debt agreements, some of which require us to maintain specified financial ratios and limit our ability to incur additional debt and sell assets, which could result in an event of default that, if not cured or waived, would have an adverse effect on our business and prospects and could result in bankruptcy.

Our ability to meet expenses, to remain in compliance with the covenants under our debt agreements, and to make future principal and interest payments in respect of our debt depends on, among other things, our operating performance, competitive developments, and financial market conditions, all of which are significantly affected by financial, business, economic, and other factors. We are not able to control many of these factors. If industry and economic conditions deteriorate, our cash flow may not be sufficient to allow them to pay principal and interest on our debt and meet our other obligations.

This increase in our indebtedness may reduce our flexibility to respond to changing business and economic conditions or to fund capital expenditure or working capital needs because we will require additional funds to service our outstanding indebtedness and may not be able to obtain additional financing.

Despite our current debt levels, we may still incur substantially more debt or take other actions which would intensify the risks associated with our substantial leverage.

Despite our current consolidated debt levels, we may be able to incur significant additional indebtedness in the future. Although our debt agreements contain restrictions on the incurrence of additional indebtedness and entering into certain types of other transactions, these restrictions are subject to a number of qualifications and exceptions. Additional indebtedness incurred in compliance with these restrictions could be substantial. These restrictions also do not prevent us or our subsidiaries from incurring obligations, such as trade payables, that do not constitute indebtedness as defined under our debt agreements. To the extent new debt is added to our current debt levels, the substantial leverage risks associated with our indebtedness would increase.

Our debt agreements impose significant operating and financial restrictions on us.

Our debt agreements impose, and the terms of any future debt may impose, significant operating and financial restrictions on us. These restrictions, among other things, may limit our ability to:

- pay dividends or distributions, repurchase equity, prepay junior debt, and make certain investments;
- incur additional debt or issue certain disqualified stock and preferred stock;
- sell or otherwise dispose of assets, including capital stock of subsidiaries;
- incur liens on assets;
- merge or consolidate with another company or sell all or substantially all assets;
- enter into certain transactions with affiliates; and
- enter into agreements that would restrict the ability of our subsidiaries to pay dividends or make other payments to the Issuers.

All of these covenants may adversely affect our ability to finance our operations, meet or otherwise address our capital needs, pursue business opportunities, react to market conditions, or otherwise restrict activities or business plans. A breach of any of these covenants could result in a default in respect of the related indebtedness. If a default occurs, the requisite lenders could elect to declare the indebtedness, together with accrued interest and other fees, to be immediately due and payable and proceed against any collateral securing that indebtedness. If repayment of our indebtedness is accelerated as a result of such default, we cannot assure you that we would have sufficient assets or access to credit to repay such indebtedness.

We may incur losses and incur additional costs as a result of our forward-contract activities and derivative transactions.

We enter into derivative contracts from time to time primarily to reduce our exposure to fluctuations in interest rates and in the price of crude oil and refined products. If the instruments we use to hedge our exposure are not effective, or if our counterparties are unable to satisfy their obligations to us, we may incur losses. We may also be required to incur additional costs in connection with future regulation of derivative instruments to the extent such regulation is applicable to us. Additionally, our commodity derivative activities may produce significant period-to-period earnings volatility that is not necessarily reflective of our underlying operational performance.

Our variable rate indebtedness subjects us to interest rate risk, which could cause our debt service obligations to increase significantly and otherwise impact our ability to incur indebtedness for acquisitions and working capital needs.

We are subject to interest rate risk in connection with borrowings under certain of our debt agreements, which bear interest at variable rates. Interest rate changes will not affect the market value of indebtedness incurred under such debt agreements, but could affect the amount of our interest payments and, accordingly, our future earnings and cash flows, assuming other factors are held constant. Increases in interest rates could also impact our ability to incur indebtedness to fund acquisitions and working capital needs. A significant increase in prevailing interest rates that results in a substantial increase in the interest rates applicable to our indebtedness could substantially increase our interest expense and have a material adverse effect on our financial condition, results of operations, and cash flows.

We cannot be certain that our net operating loss tax carryforwards will continue to be available to offset our tax liability.

As of December 31, 2019, we estimated that we had approximately $1.4 billion of net operating loss (“NOL”) tax carryforwards. In order to utilize the NOLs, we must generate taxable income that can offset such carryforwards. The availability of NOLs to offset taxable income would be substantially reduced or eliminated if we were to undergo an “ownership change” within the meaning of Section 382 of the Internal Revenue Code of 1986, as amended (the “Code”). We will be treated as having had an “ownership change” if there is more than a 50% increase in stock ownership during any three year “testing period” by “5% shareholders.” In order to help us preserve our NOLs, our certificate of incorporation contains stock transfer restrictions designed to reduce the risk of an ownership change for purposes of Section 382 of the Code. We expect that the restrictions will remain in place for the foreseeable future. We cannot assure you, however, that these restrictions will prevent an ownership change.

Our ability to utilize our NOLs to offset future taxable income is subject to various limitations, including that the NOLs will expire in various amounts, if not used, between 2027 through 2036. During 2018, the Internal Revenue Service (“IRS”) completed an audit of our tax returns for the tax years ending 2014 through 2016, which included those returns for the years in which the losses giving rise to the NOLs were reported. Although the IRS made no challenge of the availability of our NOLs during this audit, we cannot assure you that we would prevail if the IRS were to challenge the availability of the NOLs in the event of future audits. If the IRS were successful in challenging our NOLs, all or some portion of the NOLs would not be available to offset any future consolidated income, which would negatively impact our results of operations and cash flows. Certain provisions of the Tax Cuts and Jobs Act, enacted in 2017, may also limit our ability to utilize our net operating tax loss carryforwards.

We may be unable to successfully identify, execute, or effectively integrate future acquisitions, which may negatively affect our results of operations.

We will continue to pursue acquisitions in the future. Although we regularly engage in discussions with, and submit proposals to, acquisition candidates, suitable acquisitions may not be available in the future on reasonable terms. If we do identify an appropriate acquisition candidate, we may be unable to successfully negotiate the terms of an acquisition, finance the acquisition, or, if the acquisition occurs, effectively integrate the acquired business into our existing businesses. Negotiations of potential acquisitions and the integration of acquired business operations may require a disproportionate amount of management’s attention and our resources. Even if we complete additional acquisitions, continued acquisition financing may not be available or available on reasonable terms, any new businesses may not generate the anticipated level of revenues, the anticipated cost efficiencies, or synergies may not be realized, and these businesses may not be integrated successfully or operated profitably. Our inability to successfully identify, execute, or effectively integrate future acquisitions may negatively affect our results of operations.

Acquisitions may prove to be worth less than we paid because of uncertainties in evaluating potential liabilities.

Our recent growth is due in large part to acquisitions, such as the acquisitions of Wyoming Refining, Northwest Retail, U.S. Oil, and the assets related to the Par West Acquisition. We expect acquisitions to be instrumental to our future growth. Successful acquisitions require an assessment of a number of factors, including estimates of potential unknown and contingent liabilities. Such assessments are inexact and their accuracy is inherently uncertain. In connection with our assessments, we perform due diligence reviews of acquired businesses and assets that we believe are generally consistent with industry practices. However, such reviews will not reveal all existing or potential problems. In addition, our reviews may not permit us to become sufficiently familiar with potential environmental problems or other contingent and unknown liabilities that may exist or arise. As a result, there may be unknown and contingent liabilities related to acquired businesses and assets of which we are unaware. We could be liable for unknown obligations relating to acquisitions for which indemnification is not available, which could materially adversely affect our business, results of operations, and cash flows.

All of our refineries are scheduled for maintenance turnarounds in the next few years that will involve significant expenditures.

Our Wyoming refinery and the Par East refinery in Hawaii are scheduled to undergo significant maintenance turnarounds in 2020. Additionally, our newly-acquired Washington refinery anticipates conducting a turnaround during 2021. During a turnaround, all or a portion of each refinery's production may be halted or disrupted. We must acquire refined products to satisfy our supply obligations, often at a significant premium to our contractual prices, resulting in the possibility of financial loss. Any turnaround, if unsuccessful or delayed, could have a material adverse effect on our business, financial condition, or results of operations.

In addition, all of our refineries may require additional unscheduled down time for unanticipated maintenance or repairs that are more frequent than our scheduled turnarounds. Refinery operations may also be disrupted by external factors such as a suspension of feedstock deliveries or an interruption of electricity, natural gas, water treatment, or other utilities. Other potentially disruptive factors include natural disasters, severe weather conditions, workplace or environmental accidents, interruptions of supply, work stoppages, losses of permits or authorizations, or acts of terrorism. Disruptions to our refining operations could reduce our revenues and profitability during the period of time that our processing units are not operating.

A substantial portion of our refining workforce is unionized and we may face labor disruptions that would interfere with our operations.

As of December 31, 2019, we employed approximately 1,408 people, 260 of whom are covered by collective bargaining agreements. At our Par East and Washington refineries, 224 employees are represented by the United Steelworkers Union ("USW") with collective bargaining agreements expiring on January 31, 2022. At our Par West refinery, 36 employees are represented by the International Brotherhood of Electrical Workers ("IBEW") with a collective bargaining agreement expiring on December 31, 2020; we plan to engage in negotiations for a new extension of the collective bargaining agreement. However, we may not be able to prevent a strike or work stoppage in the future and any such work stoppage could cause disruptions in our business and have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Adverse changes in global economic conditions and the demand for transportation fuels may impact our business and financial condition in ways that we currently cannot predict.

A recession or prolonged economic downturn would adversely affect the business and economic environment in which we operate. These conditions increase the risks associated with the creditworthiness of our suppliers, customers, and business partners. The consequences of such adverse effects could include interruptions or delays in our suppliers' performance of our contracts, reductions and delays in customer purchases, delays in or the inability of customers to obtain financing to purchase our products, and bankruptcy of customers. Any of these events may adversely affect our financial condition, cash flows, and profitability.

RISKS RELATED TO OUR COMMON STOCK

Because we have no near term plans to pay cash dividends on our common stock, investors must look solely to stock appreciation for a return on their investment in us.

We have never declared or paid any cash dividends on our common stock. We currently intend to retain all available funds and any future earnings for use in the operation and expansion of our business and do not anticipate declaring or paying any cash dividends on our common stock in the near term. Any future determination as to the declaration and payment of cash dividends will be at the discretion of our board of directors and will depend on then-existing conditions, including our financial condition, results of operations, contractual restrictions, capital requirements, business prospects, and other factors that our board of directors considers relevant.

If securities or industry analysts do not publish research or reports about our business, if they adversely change their recommendations regarding our common stock, or if our operating results do not meet their expectations, our stock price could decline.

The trading market for our common stock is influenced by the research and reports that industry or securities analysts publish about us or our business. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

Moreover, if one or more of the analysts who cover our company downgrades our common stock or if our operating results do not meet their expectations, our stock price could decline.

The price of our common stock historically has been volatile. This volatility may affect the price at which you could sell your common stock.

The market price for our common stock has varied between a high of $25.39 on November 14, 2019, and a low of $14.14 on January 2, 2019, during the year ended December 31, 2019. This volatility may affect the price at which you could sell your common stock. Our stock price is likely to continue to be volatile and subject to significant price and volume fluctuations in response to market and other factors; variations in our quarterly operating results from our expectations or those of securities analysts or investors; downward revisions in securities analysts' estimates; and announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures, or capital commitments.

An impairment of an equity investment, a long-lived asset, or goodwill could reduce our earnings or negatively impact the value of our common stock.

Consistent with GAAP, we evaluate our goodwill for impairment at least annually and our equity investments and long-lived assets, including intangible assets with finite useful lives, whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. For the investments we account for under the equity method, such as Laramie Energy, the impairment test requires us to consider whether the fair value of the equity investment as a whole, not the underlying net assets, has declined and whether that decline is other than temporary. If we determine that an other-than-temporary impairment is indicated, we would be required to recognize a non-cash charge to earnings with a correlative effect on equity and balance sheet leverage as measured by debt to total capitalization. As a result of our impairment evaluation of our investment in Laramie Energy, we have recorded an impairment charge of $81.5 million on our statement of operations for the year ended December 31, 2019. This impairment charge or any additional impairment charges could have a negative impact on the price of our common stock. Additionally, there can be no assurance that no future impairment charge will be made with respect to our equity investments, goodwill, and long-lived assets.

The market for our common stock has been historically illiquid, which may affect your ability to sell your shares.

The volume of trading in our common stock has historically been low. In addition, a substantial amount of our common stock is beneficially owned by two shareholders. The lack of substantial liquidity can adversely affect the price of our stock at a time when you might want to sell your shares. There is no guarantee that an active trading market for our common stock will develop or be maintained on the NYSE, or that the volume of trading will be sufficient to allow for timely trades. Investors may not be able to sell their shares quickly or at the latest market price if trading in our stock is not active or if trading volume is limited. In addition, if trading volume in our common stock is limited, trades of relatively small numbers of shares may have a disproportionate effect on the market price of our common stock.

Delaware law, our charter documents, and concentrated stock ownership may impede or discourage a takeover, which could reduce the market price of our common stock.

We are a Delaware corporation and the anti-takeover provisions of Delaware law impose various impediments to the ability of a third party to acquire control of us, even if a change in control would be beneficial to our existing stockholders. For example, the change in ownership limitations contained in Article 11 of our certificate of incorporation could have the effect of discouraging or impeding an unsolicited takeover proposal. In addition, our board of directors or a committee thereof has the power, without stockholder approval, to designate the terms of one or more series of preferred stock and issue shares of preferred stock. The ability of our board of directors or a committee thereof to create and issue a new series of preferred stock and certain provisions of Delaware law and our certificate of incorporation and bylaws could impede a merger, takeover, or other business combination involving us or discourage a potential acquirer from making a tender offer for our common stock, which, under certain circumstances, could reduce the market price of our common stock.

Zell Credit Opportunities Master Fund, L.P. ("ZCOF") and Blackrock, Inc, together with their respective affiliates, each owned or had the right to acquire as of December 31, 2019 approximately 24.5% and 10.3%, respectively, of our outstanding common stock. The level of their combined ownership of shares of our common stock could have the effect of discouraging or impeding an unsolicited acquisition proposal.

We may issue preferred stock with terms that could adversely affect the voting power or value of our common stock and any future issuances of our common stock may reduce our stock price.

Our certificate of incorporation authorizes us to issue, without the approval of our stockholders, one or more classes or series of preferred stock having such designations, preferences, limitations, and relative rights, including preferences over our common stock respecting dividends and distributions, as our board of directors may determine. The terms of one or more classes or series of preferred stock could adversely impact the voting power or value of our common stock.

Additionally, we are not restricted from issuing additional shares of common stock, or securities convertible into common stock, under a registration statement declared effective by the SEC. We cannot predict the size of future issuances of our common stock. However, one or more large issuances of our common stock, or securities convertible into our common stock, may adversely affect the prevailing market price of our common stock.

Investor sentiment towards climate change, fossil fuels, and sustainability could adversely affect our business and our stock price.

There have been efforts in recent years aimed at the investment community, including investment advisors, sovereign wealth funds, public pension funds, universities, and other groups, to promote the divestment of shares of energy companies, as well as to pressure lenders and other financial services companies to limit or curtail activities with energy companies. If these efforts are successful, our stock price and our ability to access capital markets may be negatively impacted. Members of the investment community are also increasing their focus on sustainability practices, including practices related to GHGs and climate change, in the energy industry. As a result, we may face increasing pressure regarding our sustainability disclosures and practices. Additionally, members of the investment community may screen companies such as ours for sustainability performance before investing in our stock. If we are unable to meet the sustainability standards set by these investors, we may lose investors, our stock price may be negatively impacted, and our reputation may be negatively affected.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

Item 2. PROPERTIES

Please read “Item 1. — Business” of this Form 10-K for the location and general character of the properties used in our refining, retail, and logistics segments. Our corporate headquarters are located at 825 Town & Country Lane, Suite 1500, Houston, Texas 77024. We believe that these properties and facilities are adequate for our operations and are maintained in a good state of repair.

Natural Gas and Oil Properties

Laramie Energy

All of the assets held by Laramie Energy are located in Garfield, Mesa, and Rio Blanco Counties, Colorado. All of the natural gas, natural gas liquids, and condensate are produced primarily from the Mesaverde formation and to a lesser extent the Mancos formation and some of the acreage is contiguous. The geology of the Piceance Basin is characterized as highly consistent and predictable over large areas, which generally equates to reliable timing and cost expectations during drilling and completion activities, as well as minimal well-to-well variance in production and reserves when completed with the same methodology. Laramie Energy considers the Mesaverde formation within Garfield, Mesa, and Rio Blanco Counties, Colorado, to be a single field. Laramie Energy and its predecessor company have drilled over 300 natural gas wells with over a 99% success rate in the Piceance Basin.

Other

We also own certain immaterial minority working interests in wells located in Colorado. Please read Note 24—Supplemental Oil and Gas Disclosures (Unaudited) to our consolidated financial statements under Item 8 of this Form 10-K for additional information.

Reserves

For a table presenting the estimated natural gas and crude oil reserves we own indirectly through Laramie Energy, please read "Item 1. — Business — Other Operations" of this Form 10-K. The natural gas and crude oil reserves we own directly are not material.

Internal Controls Over Reserve Estimates, Technical Qualifications, and Technologies Used

Our policies regarding internal controls require our reserve estimates to be prepared in compliance with the SEC definitions and guidance by an independent third-party reserve engineering firm. These reserve estimates are reviewed and approved by our reserves committee, which ensures that our reserves estimates and related disclosures are prepared in compliance with SEC definitions and guidance, taking into consideration recent developments, including the impact of changes in commodity price and drilling and transportation costs, drilling and completion technological innovations, the evaluation of historical conversion rates for previous proved undeveloped reserves, and deviations from previously sanctioned development plans for such reserves.

Our reserves committee is comprised of the following members: our Chief Executive Officer, our Chief Financial Officer, our Chief Administrative Officer, our Chief Accounting Officer, our Associate General Counsel and Secretary, our Assistant Controller, and a strategy and financial planning director with a background in the oil and gas industry. The reserves committee also consults with representatives from our independent reserve engineering firm. In addition, with respect to the reserves that we own indirectly through Laramie Energy, our Chief Administrative Officer, our Chief Financial Officer, and our strategy and financial planning director participate in Laramie Energy's board of managers meetings (which generally occur at least quarterly) as our appointees to Laramie Energy's board of managers under the Laramie Energy limited liability company agreement. Together with the other members of our reserves committee, our Chief Executive Officer and our Chief Financial Officer review Laramie Energy's development plan and related capital expenditures and meet regularly with Laramie Energy's management in connection with our review of the development and classification of such reserves to ensure that such reserves are prepared in compliance with SEC definitions and guidance. Under the Laramie Energy limited liability company agreement, Laramie Energy is required to provide to us certain reports and other information on a monthly, quarterly, and annual basis, including monthly and quarterly reports with respect to drilling and completion activities and a comparison of budgeted amounts for such month or quarter to the actual results of operations for such month or quarter (with a written explanation of any material variances). This information allows our reserves committee to monitor Laramie Energy's development activities and to evaluate any deviations from Laramie Energy's development plan to ensure compliance with SEC definitions and guidance. The reserves committee also utilizes the information received from Laramie Energy to provide feedback to Laramie Energy (through Laramie Energy's board of managers, if necessary) with respect to such development activities. The enhanced scrutiny and evaluation of Laramie Energy's development plan by our reserves committee, supported by access to information required by Laramie Energy's organizational documents and our ability to provide feedback to Laramie Energy at the highest organizational level, ensure that our reserves estimates and related disclosures are prepared in compliance with SEC definitions and guidance.

As we do not operate our interests in our natural gas and crude oil assets, we do not have an internal reserve engineering staff and do not prepare any internal reserve estimates. William Monteleone, our Chief Financial Officer and the chair of our reserves committee, reviews the independence and professional qualifications of the third-party engineering firms we engage with the other members of our reserves committee. He also supervises the submission of technical and financial data to third-party engineering firms and reviews the prepared reports with the other members of our reserves committee. Mr. Monteleone has more than eleven years of experience in senior financial positions in the oil and gas industry. The reserves estimates shown herein have been independently evaluated by Netherland, Sewell & Associates, Inc. ("NSAI"), a worldwide leader of petroleum property analysis for industry and financial organizations and government agencies. NSAI was founded in 1961 and performs consulting petroleum engineering services under Texas Board of Professional Engineers Registration No. F-2699. Within NSAI, the technical persons primarily responsible for preparing the estimates set forth in the NSAI reserves report incorporated herein are Mr. Benjamin W. Johnson and Mr. John G. Hattner. Mr. Johnson, a Licensed Professional Engineer in the State of Texas (No. 124738), has been practicing consulting petroleum engineering at NSAI since 2007 and has over two years of prior industry experience. He graduated from Texas Tech University in 2005 with a Bachelor of Science Degree in Petroleum Engineering. Mr. Hattner, a Licensed Professional Geoscientist in the State of Texas, Geophysics (License No. 559), has been practicing consulting petroleum geoscience at NSAI since 1991 and has over 11 years of prior industry experience. He graduated from University of Miami, Florida, in 1976 with a Bachelor of Science Degree in Geology; from Florida State University in 1980 with a Master of Science Degree in Geological Oceanography; and from Saint Mary's College of California in 1989 with a Master of Business Administration Degree. Both technical principals meet or exceed the education, training, and experience requirements set forth in the Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information promulgated by the Society of Petroleum Engineers; both are proficient in judiciously applying industry standard practices to engineering and geoscience evaluations as well as applying SEC and other industry reserves definitions and guidelines. The professional qualifications of the individuals at NSAI who were responsible for overseeing the preparation of our reserve estimates as of December 31, 2019 have been filed as part of Exhibit

99.1 to this Annual Report on Form 10-K.

A variety of methodologies were used to determine our proved reserves estimates. The principal methodologies employed are decline curve analysis, analog type curve analysis, log analysis, and analogy. Substantially all of our proved reserves estimates are determined based on a combination of these methods.

Production Volumes, Unit Prices and Costs

All of Laramie Energy's properties are located in Garfield, Mesa, and Rio Blanco Counties, Colorado. Substantially all of Laramie Energy's total estimated proved reserves are located in the same geological formation, the Mesaverde formation, which Laramie Energy considers to be a single field.

The following table sets forth certain information regarding volumes of production sold, average prices received, and production costs associated with our share of Laramie Energy's production and sales of natural gas and crude oil for the years ended December 31, 2019, 2018, and 2017.

	Year Ended December 31,		
	2019	2018	2017
Production volumes			
Oil (Mbbls)	126	106	71
NGLs (Mbbls)	883	712	608
Natural Gas (MMcf)	29,677	25,513	18,104
Total (MMcfe)	35,731	30,421	22,178
Net average daily production			
Oil (Bbls)	345	290	190
NGLs (Bbls)	2,419	1,951	1,662
Natural Gas (Mcf)	81,307	69,899	49,460
Average sales price			
Oil (Per Bbl)	$ 46.99	$ 55.43	$ 45.61
NGLs (Per Bbl)	14.49	26.26	20.02
Natural Gas (per Mcf)	2.38	2.67	2.81
Hedge gain (loss) (per Mcfe)	0.02	(0.19)	(1.25)
Production costs (per Mcfe) (1)	1.16	1.28	1.36

(1) Production costs (per Mcfe) exclude ad valorem and severance taxes.

The table above excludes immaterial production volumes related to our other non-operated natural gas and oil interests. Please read Note 24—Supplemental Oil and Gas Disclosures (Unaudited) to our consolidated financial statements under Item 8 of this Form 10-K for further information on our proved reserves related to our other non-operated natural gas and oil interests.

Proved Undeveloped Reserves

The following table provides information regarding changes in our share of Laramie Energy's proved undeveloped reserves for the year ended December 31, 2019.

	Gas (MMcf)	Oil (Mbbl)	NGLs (Mbbl)	Total (MMcfe)
Proved undeveloped reserves at December 31, 2018	81,428	325	3,715	105,668
Revisions of previous estimates	(44,834)	(144)	(1,919)	(57,212)
Extensions and discoveries	—	—	—	—
Acquisitions	—	—	—	—
Conversion to proved developed reserves	(36,594)	(181)	(1,796)	(48,456)
Proved undeveloped reserves at December 31, 2019	—	—	—	—

At December 31, 2019, we held no proved undeveloped reserves directly or indirectly through our non-controlling equity ownership in Laramie Energy. The decrease in our share of Laramie Energy's proved undeveloped reserves for the year ended December 31, 2019 was due to the following:

- During the year ended December 31, 2019, Laramie Energy expended approximately $63.6 million in connection with the development of its proved undeveloped reserves. Our share of Laramie Energy's proved undeveloped reserves converted to proved developed reserves during 2019 was 48,456 MMcfe. This activity represented 46% of the prior year-end proved undeveloped reserves. The total number of proved undeveloped locations converted to proved developed reserves during 2019 was consistent with Laramie Energy's original development plan.
- Revisions of previous estimates of (57,212) MMcfe were primarily driven by changes to Laramie Energy's development plan due to unfavorable market conditions. As of December 31, 2019, Laramie Energy has ceased all drilling activities due to the continued decline in natural gas prices.

In recognition of the potential impact of recent commodity price volatility and Par's position as an equity interest owner without control of Laramie Energy's operations, Par primarily bases its determination of Laramie Energy's proved undeveloped reserves at year end 2019 on a two-year drilling and three-year completion time horizon compared to the five-year time horizon permitted under SEC requirements.

Productive Wells and Acreage

The table below shows, as of December 31, 2019, our share of Laramie Energy's gross and net wells and developed acres. Developed acreage consists of acres spaced or assignable to productive wells.

	Productive Wells					
	Oil		Gas (1)		Developed Acres	
Location	**Gross (2)**	**Net (3)**	**Gross (2)**	**Net (3)**	**Gross (2)**	**Net (3)**
Colorado (4)	—	—	1,778	674	24,810	9,448

(1) Some of the wells classified as "gas" wells also produce condensate.

(2) A "gross well" or "gross acre" is a well or acre in which a working interest is held. The number of gross wells or acres is the total number of wells or acres in which a working interest is owned.

(3) A "net well" or "net acre" is deemed to exist when the sum of fractional ownership interests in gross wells or acres equals one. The number of net wells or net acres is the sum of the fractional working interests owned in gross wells or gross acres expressed as whole numbers and fractions thereof.

(4) Net wells and net developed acres are reflected as if we owned our interest directly.

Undeveloped Acreage

At December 31, 2019, our share of undeveloped acreage held through our ownership in Laramie Energy was as follows:

	Undeveloped Acres (1) (2)	
Location	**Gross**	**Net**
Colorado (3)	250,263	83,331

(1) Undeveloped acreage is considered to be those lease acres on which wells have not been drilled or completed to a point that would permit the production of commercial quantities of crude oil and gas, regardless of whether such acreage contains proved reserves.

(2) There are no material near-term lease expirations for which the carrying value at December 31, 2019 has not already been impaired in consideration of these expirations or capital budgeted to convert acreage to held by production.

(3) Net undeveloped acres are reflected as if we owned our interest directly.

Drilling Activity

As of December 31, 2019, Laramie Energy has ceased all drilling activities due to unfavorable market conditions.

The table below shows the number of development wells completed by Laramie Energy during the periods indicated. Laramie Energy drilled no exploratory productive or dry wells during 2019, 2018, or 2017.

	Year ended December 31,					
	2019		2018		2017	
	Gross (1)	Net (2)	Gross (1)	Net (2)	Gross (1)	Net (2)
Development						
Productive	60	60	140	140	74	74
Dry	1	1	—	—	—	—
Total	61	61	140	140	74	74

(1) A “gross well” is a well in which a working interest is held. The number of gross wells is the total number of wells in which a working interest is owned.
(2) A “net well” is deemed to exist when the sum of fractional ownership interests in gross wells equals one. The number of net wells is the sum of the fractional working interests owned in gross wells expressed as whole numbers and fractions thereof.

Delivery Commitments

Laramie Energy has entered into certain gathering, processing, and transportation contracts with third parties that require Laramie Energy to deliver fixed, determinable quantities of production over specified periods of time. Under these agreements, Laramie Energy is required to make deficiency payments for any shortfalls associated with minimum volume commitments. Laramie Energy expects to fulfill delivery commitments under gathering, processing, and transportation agreements from proved developed and undeveloped reserves.

The table below shows Laramie Energy’s minimum volume commitments under gathering, processing, and transportation contracts as of December 31, 2019 (in MMcfe).

2020	28,473
2021	23,343
2022	10,186
2023	8,987
2024	8,070
Thereafter	22,989
Total delivery commitments	102,048

Item 3. LEGAL PROCEEDINGS

From time to time, we may be involved in litigation relating to claims arising out of our operations in the normal course of our business. As of the date of this Annual Report on Form 10-K, no legal proceedings are pending against us that we believe individually or collectively could have a materially adverse effect upon our financial condition, results of operations, or cash flows. Any litigation pending at the time we emerged from Chapter 11 was transferred to the General Trust for resolution and settlement. For more information, please read “Item 1. — Business—Bankruptcy and Plan of Reorganization – General Recovery Trust” and Note 16—Commitments and Contingencies to our consolidated financial statements under Item 8 of this Form 10-K.

Item 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

Item 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS, AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

On February 20, 2018, our common stock began trading on the NYSE under the symbol "PARR." Prior to that date, our common stock was traded on the NYSE American under the symbol "PARR." As of February 18, 2020, there were 149 common stockholders of record. On February 18, 2020, the closing price of our common stock was $19.91 per share on the NYSE.

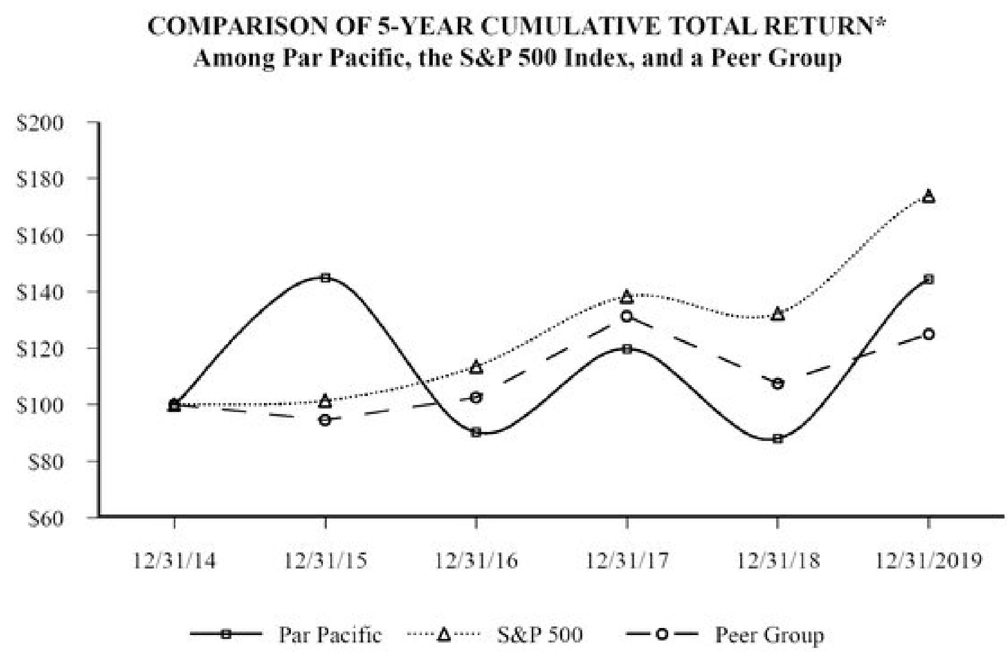
Dividends

We have not paid dividends on our common stock and we do not expect to do so in the foreseeable future.

Stock Performance Graph

The following performance graph and related information shall not be deemed "soliciting material" or "filed" with the SEC, nor shall such information be deemed to be incorporated by reference into any future filings under the Securities Act of 1933 or the Securities Exchange Act of 1934, each as amended.

This performance graph and the related textual information are based on historical data and are not indicative of future performance. The following line graph compares the cumulative total return on an investment in our common stock against the cumulative total return of the S&P 500 Composite Index and an index of peer companies (that we selected) for the five fiscal years ended December 31, 2019. The performance graph of our peer group is weighted by market value at the beginning of the period and our peer group consists of the following companies: Calumet Specialty Products Partners, L.P., Casey's General Stores, Inc., CVR Energy, Inc., Darling Ingredients Inc., Delek US Holdings, Inc., FutureFuel Corp., Green Plains Inc., Macquarie Infrastructure Corporation, Methanex Corporation, Pacific Ethanol, Inc., Renewable Energy Group, Inc., REX American Resources Corporation, SEACOR Holdings Inc., Stepan Company, and Westlake Chemical Corporation. We believe our peer group, which is made up of oil and gas refining and marketing companies, retailers, and companies that are generally similar to our operating segments, provides for meaningful comparability to our business as a whole.



*$100 invested on December 31, 2014 in stock or index, including reinvestment of dividends.

Recent Sales of Unregistered Securities

During the year ended December 31, 2019, we did not have any sales of securities in transactions that were not registered under the Securities Act that have not been reported on Form 8-K or Form 10-Q.

Issuer Purchases of Equity Securities

The following table sets forth certain information with respect to repurchases of our common stock during the quarter ended December 31, 2019:

Period	Total number of shares (or units) purchased (1)	Average price paid per share (or unit)	Total number of shares (or units) purchased as part of publicly announced plans or programs	Maximum number (or approximate dollar value) of shares (or units) that may yet be purchased under the plans or programs
October 1 - October 31, 2019	—	$ —	—	—
November 1 - November 30, 2019	344	24.89	—	—
December 1 - December 31, 2019	1,177	24.23	—	—
Total	1,521	$ 24.38	—	—

(1) All shares repurchased were surrendered by employees to pay taxes withheld upon the vesting of restricted stock awards.

Item 6. SELECTED FINANCIAL DATA

The selected financial information presented below as of December 31, 2019 and 2018 and for the years ended December 31, 2019, 2018, and 2017 was derived from our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K. The selected financial information presented below as of December 31, 2017, 2016, and 2015 and for the years ended December 31, 2016 and 2015 was derived from our audited consolidated financial statements not included in this Annual Report on Form 10-K. The selected financial information should be read in conjunction with the consolidated financial statements and related notes and "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations."

	Year Ended December 31,				
(in thousands, except per share data)	**2019 (1)**	**2018 (2)**	**2017 (3)**	**2016 (3) (4)**	**2015 (3) (5)**
Statement of Operations Data:					
Revenues	$ 5,401,516	$ 3,410,728	$ 2,443,066	$ 1,865,045	$ 2,066,337
Depreciation, depletion, and amortization	86,121	52,642	45,989	31,617	19,918
Impairment expense	—	—	—	—	9,639
Operating income (loss)	147,980	81,941	93,961	(19,649)	55,730
Interest expense and financing costs, net	(74,839)	(39,768)	(31,632)	(28,506)	(20,156)
Debt extinguishment and commitment costs	(11,587)	(4,224)	(8,633)	—	(19,669)
Gain on curtailment of pension or post-retirement medical plan obligation	—	—	—	3,067	5,595
Change in value of common stock warrants	(3,199)	1,801	(1,674)	2,962	(3,664)
Change in value of contingent consideration	—	(10,500)	—	10,770	(18,450)
Equity earnings (losses) from Laramie Energy, LLC	(89,751)	9,464	18,369	(22,381)	(55,983)
Net income (loss)	40,809	39,427	72,621	(45,835)	(39,911)
Income (loss) per diluted common share	0.80	0.85	1.57	(1.08)	(1.06)
Balance Sheet Data:					
Cash and cash equivalents	$ 126,015	$ 75,076	$ 118,333	$ 47,772	$ 167,788
Total current assets	1,032,174	586,592	603,544	403,108	531,752
Total assets (6)	2,700,560	1,460,734	1,347,407	1,145,433	892,261
Total current liabilities (6)	1,034,322	507,201	470,952	382,765	365,040
Total long-term debt, net of current maturities	599,634	392,607	384,812	350,110	154,212
Total liabilities (6)	2,052,318	948,405	899,688	776,524	551,650
Total stockholders' equity	648,242	512,329	447,719	368,909	340,611

(1) We completed the Washington Acquisition effective January 11, 2019, therefore the results of the Washington refinery and logistics assets are only included subsequent to January 11, 2019. Please read Note 4—Acquisitions to the consolidated financial statements under Item 8 of this Form 10-K for further information.

(2) We completed the Northwest Retail Acquisition effective March 23, 2018, therefore the results of Northwest Retail are only included subsequent to March 23, 2018. Please read Note 4—Acquisitions to the consolidated financial statements under Item 8 of this Form 10-K for further information.

(3) Due to a required accounting standards update, Operating income (loss) for the year ended December 31, 2016 was retrospectively recast to reflect the reclassification of the curtailment gain of $3.1 million related to an amendment on our defined benefit pension plan from Operating expense (excluding depreciation) to a newly defined line within Total other income (expense), net, Gain on curtailment of pension obligation. Similarly, Operating income (loss) for the year ended December 31, 2015 was retrospectively recast to reflect the reclassification of the curtailment gain of $5.6 million related to the termination of our post-retirement medical plan from Operating expense (excluding depreciation) to a newly defined line within Total other income (expense), net, Gain on curtailment of post-retirement medical plan obligation. For the years ended December 31, 2017, 2016, and 2015, other immaterial non-service-cost-related components of the net periodic benefit cost related to our defined benefit pension plan and post-retirement medical plan were reclassified from Operating expense (excluding depreciation) to Other income (expense), net.

(4) We completed the WRC Acquisition effective July 14, 2016, therefore the results of WRC are only included subsequent to July 14, 2016.

(5) Effective April 1, 2015, we completed the acquisition of Mid Pac Petroleum, LLC (which was dissolved and its assets merged into Par Hawaii, LLC (“PHL”) during 2019), therefore, the results of Mid Pac Petroleum, LLC are only included subsequent to April 1, 2015.

(6) On January 1, 2019, we adopted Accounting Standards Update (“ASU”) No. 2016-02, *Leases (Topic 842)*, as amended by other ASUs issued through February 2019 (“ASU 2016-02” or “ASC 842”), using the modified retrospective transition method. Under this optional transition method, information presented prior to January 1, 2019 has not been restated and continues to be reported under the accounting standards in effect for the period. Please read Note 2—Summary of Significant Accounting Policies to our consolidated financial statements under Item 8 of this Form 10-K for more information.

Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview

We are a growth-oriented company based in Houston, Texas, that owns and operates market-leading energy and infrastructure businesses. For more information, please read "Part I –Item 1. — Business—Overview" of this Form 10-K.

Recent Events Affecting Comparability of Periods

Washington Acquisition

On January 11, 2019, we completed the Washington Acquisition for total consideration of $326.5 million, including acquired working capital, consisting of cash consideration of $289.5 million and approximately 2.4 million shares of our common stock with a fair value of $37.0 million issued to the seller of U.S. Oil. The results of operations for U.S. Oil were included in our refining and logistics segments commencing January 11, 2019. Please read Note 4—Acquisitions to our consolidated financial statements under Item 8 of this Form 10-K for more information.

In connection with the consummation of the Washington Acquisition, we assumed the Washington Refinery Intermediation Agreement with MLC that provides a structured financing arrangement based on U.S. Oil's crude oil and refined products inventories and associated accounts receivable. Please read Note 11—Inventory Financing Agreements to our consolidated financial statements under Item 8 of this Form 10-K for more information.

Par West Acquisition

On December 19, 2018, we completed the Par West Acquisition for approximately $66.9 million, net of a $4.3 million receivable related to net working capital adjustments. The purchase price consisted of $47.6 million in cash and approximately 1.1 million shares of our common stock with a fair value of $19.3 million. The results of operations of the acquired assets are included in our refining segment commencing December 19, 2018. Please read Note 4—Acquisitions to our consolidated financial statements under Item 8 of this Form 10-K for more information.

Northwest Retail Acquisition

On March 23, 2018, we completed the Northwest Retail Acquisition for cash consideration of approximately $74.5 million. As part of the Northwest Retail Acquisition, Par and CHS, Inc. entered into a multi-year branded petroleum marketing agreement for the continued supply of Cenex®-branded refined products to the 33 acquired Cenex® Zip Trip retail outlets. The results of operations of Northwest Retail are included in our retail segment commencing March 23, 2018. Please read Note 4—Acquisitions to our consolidated financial statements under Item 8 of this Form 10-K for more information.

Amended and Restated J. Aron Supply and Offtake Agreements

On June 27, 2018, we and J. Aron amended the Supply and Offtake Agreements to increase the amount that we may defer under the deferred payment arrangement. Prior to June 27, 2018, we had the right to defer payments owed to J. Aron up to the lesser of $125 million or 85% of eligible accounts receivable and inventory. Effective June 27, 2018, we have the right to defer payments owed to J. Aron up to the lesser of $165 million or 85% of eligible accounts receivable and inventory. On December 5, 2018, we amended and restated the Supply and Offtake Agreements to account for additional processing capacity provided through the Par West Acquisition. Please read Note 11—Inventory Financing Agreements to our consolidated financial statements under Item 8 of this Form 10-K for more information.

Other Factors Affecting Comparability of Prior Periods

On January 1, 2019, we adopted Accounting Standards Update ("ASU") No. 2016-02, *Leases (Topic 842)*, as amended by other ASUs issued through February 2019 ("ASU 2016-02" or "ASC 842"), using the modified retrospective transition method. Under this optional transition method, information presented prior to January 1, 2019 has not been restated and continues to be reported under the accounting standards in effect for the period. Please read Note 2—Summary of Significant Accounting Policies to our consolidated financial statements under Item 8 of this Form 10-K for more information.

Results of Operations

Year Ended December 31, 2019 Compared to Year Ended December 31, 2018

Net Income. Our net income increased from $39.4 million for the year ended December 31, 2018 to $40.8 million for the year ended December 31, 2019. The increase in our net income was primarily driven by the impact of the Washington Acquisition and a $69.7 million income tax benefit primarily associated with a partial release of our valuation allowance in connection with the Washington Acquisition. These increases were partially offset by a non-cash impairment charge of $81.5 million related to our equity investment in Laramie Energy and higher interest expense due primarily to increases in our outstanding indebtedness. Other factors impacting our results period over period include higher debt extinguishment and commitment costs associated with the Washington Acquisition and exchange of a portion of our outstanding 5.00% Convertible Senior Notes, partially offset by a $10.5 million charge related to the Tesoro earn-out settlement in 2018 that did not recur in 2019.

Adjusted EBITDA and Adjusted Net Income. For the year ended December 31, 2019, Adjusted EBITDA was $260.4 million compared to $132.1 million for the year ended December 31, 2018. The change was primarily related to contributions provided by the Washington Acquisition, increased sales volumes at our Hawaii refineries, increased sales volume and favorable crude oil differentials and feedstock costs at our Wyoming refinery, and improved fuel margins in our Retail operations. These increases were partially offset by higher feedstock costs and unplanned maintenance at our Hawaii refineries.

For the year ended December 31, 2019, Adjusted Net Income was approximately $91.7 million compared to income of $49.3 million for the year ended December 31, 2018. The change was primarily related to the same factors described above for the increase in Adjusted EBITDA as well as a $19.2 million decrease in our Equity earnings from Laramie Energy, excluding our share of unrealized gains or losses on derivatives and excluding impairment changes associated with our investment in Laramie Energy, an increase in DD&A primarily associated with assets acquired in connection with the Washington Acquisition, and increased interest expense and financing costs primarily related to the new Term Loan B Facility, the Washington Refinery Intermediation Agreement, and the Retail Property Term Loan. These increases were partially offset by a decrease in interest expense and financing costs due to the exchange of a portion of our outstanding 5.00% Convertible Senior Notes during 2019.

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Net Income. Our net income decreased from $72.6 million for the year ended December 31, 2017 to net income of $39.4 million for the year ended December 31, 2018. The decrease in our net income was primarily driven by lower refining margins, a $10.5 million charge related to the Tesoro earn-out settlement, higher acquisition and integration costs, and a decrease in our Equity earnings (losses) from Laramie Energy, LLC, partially offset by improved margins in our retail segment. Other factors impacting our results period over period include increased interest expense and financing fees and DD&A.

Adjusted EBITDA and Adjusted Net Income. For the year ended December 31, 2018, Adjusted EBITDA was $132.1 million compared to $140.8 million for the year ended December 31, 2017. The change was primarily related to lower refining margins driven by unfavorable crude oil differentials, partially offset by improved margins in our retail segment and an increase in refined product sales volumes and crack spreads.

For the year ended December 31, 2018, Adjusted Net Income was approximately $49.3 million compared to approximately $63.3 million for the year ended December 31, 2017. The change was primarily related to the same factors described above for the decrease in Adjusted EBITDA and increased interest expense and financing fees and DD&A.

The following table summarizes our consolidated results of operations for the years ended December 31, 2019, 2018, and 2017 (in thousands). The following should be read in conjunction with our consolidated financial statements under Item 8 of this Annual Report on Form 10-K.

	Year Ended December 31,		
	2019	2018	2017
Revenues	$ 5,401,516	$ 3,410,728	$ 2,443,066
Cost of revenues (excluding depreciation)	4,803,589	3,003,116	2,054,627
Operating expense (excluding depreciation)	312,899	215,284	202,016
Depreciation, depletion, and amortization	86,121	52,642	45,989
General and administrative expense (excluding depreciation)	46,223	47,426	46,078
Acquisition and integration costs	4,704	10,319	395
Total operating expenses	5,253,536	3,328,787	2,349,105
Operating income	147,980	81,941	93,961
Other income (expense)			
Interest expense and financing costs, net	(74,839)	(39,768)	(31,632)
Debt extinguishment and commitment costs	(11,587)	(4,224)	(8,633)
Other expense, net	2,516	1,046	911
Change in value of common stock warrants	(3,199)	1,801	(1,674)
Change in value of contingent consideration	—	(10,500)	—
Equity earnings (losses) from Laramie Energy, LLC	(89,751)	9,464	18,369
Total other expense, net	(176,860)	(42,181)	(22,659)
Income (loss) before income taxes	(28,880)	39,760	71,302
Income tax benefit (expense)	69,689	(333)	1,319
Net Income	$ 40,809	$ 39,427	$ 72,621

The following tables summarize our operating income (loss) by segment for the years ended December 31, 2019, 2018, and 2017 (in thousands). The following should be read in conjunction with our consolidated financial statements under Item 8 of this Annual Report on Form 10-K.

Year ended December 31, 2019	Refining	Logistics (1)	Retail	Corporate, Eliminations and Other (2)	Total
Revenues	$ 5,167,942	$ 199,226	$ 458,889	$ (424,541)	$ 5,401,516
Cost of revenues (excluding depreciation)	4,783,747	112,124	332,302	(424,584)	4,803,589
Operating expense (excluding depreciation)	234,582	11,010	67,307	—	312,899
Depreciation, depletion, and amortization	55,832	17,017	10,035	3,237	86,121
General and administrative expense (excluding depreciation)	—	—	—	46,223	46,223
Acquisition and integration costs	—	—	—	4,704	4,704
Operating income (loss)	$ 93,781	$ 59,075	$ 49,245	$ (54,121)	$ 147,980

Year ended December 31, 2018	Refining	Logistics (1)	Retail	Corporate, Eliminations and Other (2)	Total
Revenues	$ 3,210,067	$ 125,743	$ 441,040	$ (366,122)	$ 3,410,728
Cost of revenues (excluding depreciation)	2,957,995	77,712	333,664	(366,255)	3,003,116
Operating expense (excluding depreciation)	146,320	7,782	61,182	—	215,284
Depreciation, depletion, and amortization	32,483	6,860	8,962	4,337	52,642
General and administrative expense (excluding depreciation)	—	—	—	47,426	47,426
Acquisition and integration costs	—	—	—	10,319	10,319
Operating income (loss)	$ 73,269	$ 33,389	$ 37,232	$ (61,949)	$ 81,941

Year ended December 31, 2017	Refining	Logistics (1)	Retail	Corporate, Eliminations and Other (2)	Total
Revenues	$ 2,319,638	$ 121,470	$ 326,076	$ (324,118)	$ 2,443,066
Cost of revenues (excluding depreciation)	2,062,804	66,301	249,097	(323,575)	2,054,627
Operating expense (excluding depreciation)	141,065	15,010	45,941	—	202,016
Depreciation, depletion, and amortization	29,753	6,166	6,338	3,732	45,989
General and administrative expense (excluding depreciation)	—	—	—	46,078	46,078
Acquisition and integration costs	—	—	—	395	395
Operating income (loss)	$ 86,016	$ 33,993	$ 24,700	$ (50,748)	$ 93,961

(1) Our logistics operations consist primarily of intercompany transactions which eliminate on a consolidated basis.

(2) Includes eliminations of intersegment Revenues and Cost of revenues (excluding depreciation) of $424.5 million, $365.5 million, and $325.2 million for the years ended December 31, 2019, 2018, and 2017, respectively.

Below is a summary of key operating statistics for the refining segment for the years ended December 31, 2019, 2018, and 2017:

	Year Ended December 31,		
	2019 (1)	2018 (1)	2017 (1)
Total Refining Segment			
Feedstocks Throughput (Mbpd) (2) (3)	163.8	91.3	89.2
Refined product sales volume (Mbpd) (2)	176.8	100.3	90.7
Hawaii Refineries			
Combined Feedstocks Throughput (Mbpd) (3)	109.0	74.9	73.7
Par East Throughput (Mbpd) (3)	71.5	73.4	73.7
Par West Throughput (Mbpd) (3)	37.5	42.1	—
Yield (% of total throughput)			
Gasoline and gasoline blendstocks	23.0%	27.1%	27.8%
Distillates	44.4%	47.4%	48.2%
Fuel oils	20.3%	17.8%	15.7%
Other products	8.7%	4.5%	5.0%
Total yield	96.4%	96.8%	96.7%
Refined product sales volume (Mbpd)			
On-island sales volume	114.1	74.6	63.3
Exports sales volume	5.7	9.0	11.4
Total refined product sales volume	119.8	83.6	74.7
Adjusted Gross Margin per bbl ($/throughput bbl) (4)	$ 3.30	$ 5.37	$ 6.43
Production costs per bbl ($/throughput bbl) (5)	3.25	3.65	3.60
DD&A per bbl ($/throughput bbl)	0.40	0.66	0.64
Washington Refinery			
Feedstocks Throughput (Mbpd) (2)	38.9	—	—
Yield (% of total throughput)			
Gasoline and gasoline blendstocks	23.6%	—%	—%
Distillates	35.6%	—%	—%
Asphalt	18.9%	—%	—%
Other products	19.4%	—%	—%
Total yield	97.5%	—%	—%
Refined product sales volume (Mbpd) (2)	41.1	—	—
Adjusted Gross Margin per bbl ($/throughput bbl) (4)	$ 11.37	$ —	$ —
Production costs per bbl ($/throughput bbl) (5)	4.52	—	—
DD&A per bbl ($/throughput bbl)	1.56	—	—

	Year Ended December 31,		
	2019 (1)	2018 (1)	2017 (1)
Wyoming Refinery			
Feedstocks Throughput (Mbpd)	17.0	16.4	15.5
Yield (% of total throughput)			
Gasoline and gasoline blendstocks	49.6%	49.5%	51.9%
Distillates	44.5%	45.8%	42.8%
Fuel oil	1.7%	1.6%	2.2%
Other products	1.6%	0.8%	0.8%
Total yield	97.4%	97.7%	97.7%
Refined product sales volume (Mbpd)	17.0	16.7	16.0
Adjusted Gross Margin per bbl ($/throughput bbl) (4)	$ 18.82	$ 15.29	$ 14.46
Production costs per bbl ($/throughput bbl) (5)	6.32	7.06	7.18
DD&A per bbl ($/throughput bbl)	2.93	2.39	2.19
Market Indices ($ per barrel)			
4-1-2-1 Singapore Crack Spread (6)	$ 6.68	$ 7.22	$ 7.18
3-1-2 Singapore Crack Spread (7)	10.80	10.90	10.63
Pacific Northwest 5-2-2-1 Index (8)	15.02	—	—
Wyoming 3-2-1 Index (9)	24.90	22.69	21.80
Crude Prices ($ per barrel)			
Brent	$ 64.19	$ 71.55	$ 54.82
WTI	57.08	64.90	50.85
ANS	65.72	72.16	54.09
Bakken Clearbrook	56.04	62.36	51.15
WCS Hardisty	43.18	38.33	38.17
Brent M1-M3	1.00	0.37	(0.15)

(1) Previously-reported logistics pipeline throughput volumes have been removed from the Operating Statistics table post-closing of the Washington Acquisition as we have determined that pipeline throughput is no longer a relevant indicator of logistics segment profitability given the low weighting of pipeline movements at the Washington refinery. Operating income (loss) per barrel has also been removed from the table because we do not believe it to be an indicative measure of our refineries' profitability.

(2) Feedstocks throughput and sales volumes per day for the Washington refinery for the year ended December 31, 2019 are calculated based on the 355-day period for which we owned the Washington refinery in 2019. The amounts for the total refining segment represent the sum of the Hawaii, Washington, and Wyoming refineries' throughput or sales volumes averaged over the years ended December 31, 2019, 2018, and 2017.

(3) Feedstocks throughput and sales volumes per day for each of the Hawaii refineries for the year ended December 31, 2018 are calculated based on the 365-day period we owned the Par East refinery and the 13-day period for which we owned the Par West refinery. The amounts for the combined Hawaii refineries for the years ended December 31, 2019 and 2018 represent the sum of the Par East and Par West refineries' throughput averaged over the respective years.

(4) We calculate Adjusted Gross Margin per barrel by dividing Adjusted Gross Margin by total refining throughput. Adjusted Gross Margin for our Washington refinery is determined under the last-in, first-out ("LIFO") inventory costing method. Adjusted Gross Margin for our other refineries is determined under the first-in, first-out ("FIFO") inventory costing method. Please see discussion of Adjusted Gross Margin below.

(5) Management uses production costs per barrel to evaluate performance and compare efficiency to other companies in the industry. There are a variety of ways to calculate production costs per barrel; different companies within the industry calculate it in different ways. We calculate production costs per barrel by dividing all direct production costs, which include the costs to run the refineries including personnel costs, repair and maintenance costs, insurance, utilities, and other miscellaneous costs, by total refining throughput. Our production costs are included in Operating expense (excluding depreciation) on our consolidated statement of operations, which also includes costs related to our bulk marketing operations.

(6) The profitability of our Hawaii business is heavily influenced by crack spreads in the Singapore market. This market reflects the closest liquid market alternative to source refined products for Hawaii. Prior to 2020, the 4-1-2-1 Singapore crack spread (or four barrels of Brent crude oil converted into one barrel of gasoline, two barrels of distillates (diesel and jet fuel), and one barrel of fuel oil) was the most representative market indicator for our Hawaii refineries' operations. See footnote 7 below for a discussion of the 3-1-2 Singapore Crack Spread.

(7) After completing the acquisition of Par West, we began shifting our Hawaii production profile to supply the local utilities with low sulfur fuel oil and significantly reduced our high sulfur fuel oil yield. In 2020, following the implementation of IMO 2020, we established the 3-1-2 Singapore Crack Spread (or three barrels of Brent crude oil converted into one barrel of gasoline and two barrels of distillates (diesel and jet fuel)) as a new benchmark for our Hawaii operations. By removing the high sulfur fuel oil reference in the index, we believe the 3-1-2 Singapore Crack Spread is the most representative market indicator of our current operations in Hawaii.

(8) We believe the Pacific Northwest 5-2-2-1 Index is the most representative market indicator for our operations in Tacoma, Washington. The Pacific Northwest 5-2-2-1 Index is computed by taking two parts gasoline (sub-octane), two parts middle distillates (ULSD and jet fuel), and one part fuel oil as created from five barrels of Alaskan North Slope ("ANS") crude oil. The 2019 prices for the year ended December 31, 2019 represent the price averaged over the period from January 11, 2019 to December 31, 2019.

(9) The profitability of our Wyoming refinery is heavily influenced by crack spreads in nearby markets. We believe the Wyoming 3-2-1 Index is the most representative market indicator for our operations in Wyoming. The Wyoming 3-2-1 Index is computed by taking two parts gasoline and one part distillates (ULSD) as created from three barrels of West Texas Intermediate Crude Oil ("WTI"). Pricing is based 50% on applicable product pricing in Rapid City, South Dakota, and 50% on applicable product pricing in Denver, Colorado.

Below is a summary of key operating statistics for the retail segment for the years ended December 31, 2019, 2018, and 2017:

	Year Ended December 31,		
	2019	**2018**	**2017**
Retail Segment			
Retail sales volumes (thousands of gallons) (1)	125,313	116,715	92,739

(1) Retail sales volumes for the year ended December 31, 2018, include 284 days of retail sales volumes from Northwest Retail since its acquisition on March 23, 2018. The 2019 amount represents the sum of the Hawaii and Northwest Retail sales volumes for the year ended December 31, 2019.

Non-GAAP Performance Measures

Management uses certain financial measures to evaluate our operating performance that are considered non-GAAP financial measures. These measures should not be considered a substitute for, or superior to, measures of financial performance prepared in accordance with GAAP and our calculations thereof may not be comparable to similarly titled measures reported by other companies.

Adjusted Gross Margin. Adjusted Gross Margin is defined as (i) operating income (loss) plus operating expense (excluding depreciation), impairment expense, inventory valuation adjustment (which adjusts for timing differences to reflect the economics of our inventory financing agreements, including lower of cost or net realizable value adjustments, the impact of the embedded derivative repurchase or terminal obligations, and purchase price allocation adjustments), DD&A, RINs loss (gain) in excess of net obligation (which represents the income statement effect of reflecting our RINs liability on a net basis), and unrealized loss (gain) on derivatives or (ii) revenues less cost of revenues (excluding depreciation) plus inventory valuation adjustment, unrealized loss (gain) on derivatives, and RINs loss (gain) in excess of net obligation. We define cost of revenues (excluding depreciation) as the hydrocarbon-related costs of inventory sold, transportation costs of delivering product to customers, crude oil consumed in the refining process, costs to satisfy our RINs and environmental credit obligations, and certain hydrocarbon fees and taxes. Cost of revenues (excluding depreciation) also includes the unrealized gain (loss) on derivatives and the inventory valuation adjustment that we exclude from Adjusted Gross Margin.

Management believes Adjusted Gross Margin is an important measure of operating performance and uses Adjusted Gross Margin per barrel to evaluate operating performance and compare profitability to other companies in the industry and to industry benchmarks. Management believes Adjusted Gross Margin provides useful information to investors because it eliminates the gross impact of volatile commodity prices and adjusts for certain non-cash items and timing differences created by our inventory financing agreements and lower of cost or net realizable value adjustments to demonstrate the earnings potential of the business before other fixed and variable costs, which are reported separately in Operating expense (excluding depreciation) and Depreciation, depletion, and amortization.

Adjusted Gross Margin should not be considered an alternative to operating income (loss), cash flows from operating activities, or any other measure of financial performance or liquidity presented in accordance with GAAP. Adjusted Gross Margin presented by other companies may not be comparable to our presentation since each company may define this term differently as they may include other manufacturing costs and depreciation expense in cost of revenues.

The following tables present a reconciliation of Adjusted Gross Margin to the most directly comparable GAAP financial measure, operating income (loss), on a historical basis, for selected segments, for the periods indicated (in thousands):

Year ended December 31, 2019	**Refining**	**Logistics**	**Retail**
Operating income	$ 93,781	$ 59,075	$ 49,245
Operating expense (excluding depreciation)	234,582	11,010	67,307
Depreciation, depletion, and amortization	55,832	17,017	10,035
Inventory valuation adjustment	13,441	—	—
RINs gain in excess of net obligation	(3,398)	—	—
Unrealized loss on derivatives	8,988	—	—
Adjusted Gross Margin (2)	$ 403,226	$ 87,102	$ 126,587

Year ended December 31, 2018	**Refining**	**Logistics**	**Retail**
Operating income	$ 73,269	$ 33,389	$ 37,232
Operating expense (excluding depreciation)	146,320	7,782	61,182
Depreciation, depletion, and amortization	32,483	6,860	8,962
Inventory valuation adjustment	(16,875)	—	—
RINs loss in excess of net obligation	4,544	—	—
Unrealized gain on derivatives	(1,497)	—	—
Adjusted Gross Margin (2)	$ 238,244	$ 48,031	$ 107,376

Year ended December 31, 2017	**Refining**	**Logistics**	**Retail**
Operating income (1)	$ 86,016	$ 33,993	$ 24,700
Operating expense (excluding depreciation)	141,065	15,010	45,941
Depreciation, depletion, and amortization	29,753	6,166	6,338
Inventory valuation adjustment	(1,461)	—	—
RINs gain in excess of net obligation	—	—	—
Unrealized gain on derivatives	(623)	—	—
Adjusted Gross Margin (2)	$ 254,750	$ 55,169	$ 76,979

(1) For the year ended December 31, 2017, immaterial non-service-cost-related components of the net periodic benefit cost related to our Wyoming Refining defined benefit pension plan were reclassified from Operating expense (excluding depreciation) to Other income (expense), net, due to a required accounting standards update made in 2018.

(2) For the years ended December 31, 2019, 2018, and 2017, there was no impairment expense.

Adjusted Net Income (Loss) and Adjusted EBITDA. Adjusted Net Income (Loss) is defined as Net income (loss) excluding changes in the value of contingent consideration and common stock warrants, acquisition and integration costs, unrealized (gain) loss on derivatives, debt extinguishment and commitment costs, increase in (release of) tax valuation allowance and other deferred tax items, inventory valuation adjustment, severance costs, impairment expense, (gain) loss on sale of assets, Par's share of Laramie Energy's unrealized loss (gain) on derivatives, and RINs loss (gain) in excess of net obligation. The exclusion of Par's share of Laramie Energy's unrealized loss (gain) on derivatives from Adjusted Net Income (Loss) is consistent with our treatment of Par's unrealized (gains) losses on derivatives, which are also excluded from Adjusted Net Income (Loss). Beginning in 2019, Adjusted Net Income (Loss) also excludes impairment expense associated with our investment in Laramie Energy and our share of Laramie Energy's asset impairment losses in excess of our basis difference.

Adjusted EBITDA is Adjusted Net Income (Loss) excluding interest expense and financing costs, income taxes, DD&A, and equity losses (earnings) from Laramie Energy, excluding Par's share of unrealized loss (gain) on derivatives. Beginning in 2019, equity losses (earnings) from Laramie Energy also excludes impairment of Par's investment and our share of Laramie Energy's asset impairment losses in excess of our basis difference.

We believe Adjusted Net Income (Loss) and Adjusted EBITDA are useful supplemental financial measures that allow investors to assess:

- The financial performance of our assets without regard to financing methods, capital structure, or historical cost basis;
- The ability of our assets to generate cash to pay interest on our indebtedness; and
- Our operating performance and return on invested capital as compared to other companies without regard to financing methods and capital structure.

Adjusted Net Income (Loss) and Adjusted EBITDA should not be considered in isolation or as a substitute for operating income (loss), net income (loss), cash flows provided by operating, investing, and financing activities, or other income or cash flow statement data prepared in accordance with GAAP. Adjusted Net Income (Loss) and Adjusted EBITDA presented by other companies may not be comparable to our presentation as other companies may define these terms differently.

The following table presents a reconciliation of Adjusted Net Income (Loss) and Adjusted EBITDA to the most directly comparable GAAP financial measure, net income (loss), on a historical basis for the periods indicated (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Net Income	$ 40,809	$ 39,427	$ 72,621
Inventory valuation adjustment	13,441	(16,875)	(1,461)
RINs loss (gain) in excess of net obligation	(3,398)	4,544	—
Unrealized loss (gain) on derivatives	8,988	(1,497)	(623)
Acquisition and integration costs	4,704	10,319	395
Debt extinguishment and commitment costs	11,587	4,224	8,633
Changes in valuation allowance and other deferred tax items (1)	(68,792)	(660)	—
Change in value of common stock warrants	3,199	(1,801)	1,674
Change in value of contingent consideration	—	10,500	—
Severance costs	—	—	1,595
Impairments of Laramie Energy, LLC (2)	83,152	—	—
Par's share of Laramie Energy's unrealized loss (gain) on derivatives (2)	(1,969)	1,158	(19,568)
Adjusted Net Income (3)	91,721	49,339	63,266
Depreciation, depletion, and amortization	86,121	52,642	45,989
Interest expense and financing costs, net	74,839	39,768	31,632
Equity losses (earnings) from Laramie Energy, LLC, excluding Par's share of unrealized loss (gain) on derivatives and impairment losses	8,568	(10,622)	1,199
Income tax expense (benefit)	(897)	993	(1,319)
Adjusted EBITDA	$ 260,352	$ 132,120	$ 140,767

(1) Includes increases in (releases of) our valuation allowance associated with business combinations and changes in deferred tax assets and liabilities that are not offset by a change in the valuation allowance. These tax expenses (benefits) are included in Income tax expense (benefit) on our consolidated statements of operations.

(2) Includes our share of Laramie Energy's unrealized loss (gain) on derivatives, impairment losses on our investment in Laramie Energy, and our share of Laramie Energy's asset impairment losses in excess of our basis difference. These impairment losses and our share of Laramie Energy's unrealized loss (gain) on derivatives are included in Equity earnings (losses) from Laramie Energy, LLC on our consolidated statements of operations.

(3) For the years ended December 31, 2019, 2018, and 2017, there was no (gain) loss on sale of assets.

Discussion of Operating Income by Segment

Year Ended December 31, 2019 Compared to Year Ended December 31, 2018

Refining. Operating income for our refining segment was $93.8 million for the year ended December 31, 2019, an increase of $20.5 million compared to operating income of $73.3 million for the year ended December 31, 2018. The increase in profitability was primarily driven by the contribution of the Washington Acquisition and favorable crude oil differentials and feedstock costs at our Wyoming refinery. The Washington refinery assets contributed operating income of approximately $53.3 million to the refining segment for the period from January 11, 2019 to December 31, 2019. The Wyoming 3-2-1 Index increased 10% from $22.69 per barrel for the year ended December 31, 2018 to $24.90 per barrel for the year ended December 31, 2019. These contributions were partially offset by unfavorable crude oil differentials, unplanned maintenance, and an increase in feedstock costs at our Hawaii refineries. The unplanned maintenance in Hawaii resulted in an increase of $2.6 million in operating expenses and approximately 11 lost throughput days within certain units at our Par East refinery.

Logistics. Operating income for our logistics segment was $59.1 million for the year ended December 31, 2019, an increase of $25.7 million compared to operating income of $33.4 million for the year ended December 31, 2018. The increase is primarily due to a contribution of $18.8 million from the logistics assets acquired in connection with the Washington Acquisition for the period from January 11, 2019 to December 31, 2019 and additional on-island sales through our logistics network.

Retail. Operating income for our retail segment was $49.2 million for the year ended December 31, 2019, an increase of $12.0 million compared to operating income of $37.2 million for the year ended December 31, 2018. The increase in profitability was primarily due to an increase in fuel margins of 10% and an increase in sales volumes of 7%.

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Refining. Operating income for our refining segment was $73.3 million for the year ended December 31, 2018, a decrease of $12.7 million compared to an operating income of $86.0 million for the year ended December 31, 2017. The decrease in profitability was primarily due to lower refining margins in Hawaii offset by improved crack spreads. Feedstock costs at the Hawaii refineries increased approximately 29% due to unfavorable crude oil differentials and increased refined product purchases to meet higher on-island demand and contractual obligations. The decrease was partially offset by a 12% increase in the Hawaii refineries' sales volumes and improved crack spreads in Hawaii and Wyoming. The Singapore crack spread increased 1% from $7.18 per barrel for the year ended December 31, 2017 to $7.22 per barrel for the year ended December 31, 2018. The Wyoming Index increased 4% from $21.80 per barrel for the year ended December 31, 2017 to $22.69 per barrel for the year ended December 31, 2018. Another contributing factor was a decrease in RINs expense of approximately $18.5 million due primarily to our refineries obtaining a small refinery exemption for 2017 during the first quarter of 2018.

Logistics. Operating income for our logistics segment was $33.4 million for the year ended December 31, 2018, which is relatively consistent with operating income of $34.0 million for the year ended December 31, 2017.

Retail. Operating income for our retail segment was $37.2 million for the year ended December 31, 2018, an increase of $12.5 million compared to operating income of $24.7 million for the year ended December 31, 2017. The increase in profitability was primarily due to an increase in sales prices of 14% and an increase in sales volumes of 26%, primarily due to the acquisition of Northwest Retail.

Discussion of Adjusted Gross Margin by Segment

Year Ended December 31, 2019 Compared to Year Ended December 31, 2018

Refining. For the year ended December 31, 2019, our refining Adjusted Gross Margin was approximately $403.2 million, an increase of $165.0 million compared to $238.2 million for the year ended December 31, 2018. The increase in profitability was primarily driven by the Washington refinery, which contributed Adjusted Gross Margin of $157.0 million to the refining segment for the period from January 11, 2019 to December 31, 2019. Other factors included increased sales volumes and favorable crude oil differentials and feedstock costs at our Wyoming refinery. The Wyoming 3-2-1 Index increased 10% from $22.69 per barrel for the year ended December 31, 2018 to $24.90 per barrel for the year ended December 31, 2019. These increases were partially offset by higher feedstock costs at our Hawaii refineries and unplanned maintenance at our Par East refinery that resulted in approximately 11 lost throughput days within certain units.

Logistics. For the year ended December 31, 2019, our logistics Adjusted Gross Margin was approximately $87.1 million, an increase of $39.1 million compared to $48.0 million for the year ended December 31, 2018. The increase was primarily driven by the contribution of the Washington assets and higher throughput in Hawaii due to the additional on-island sales through our logistics network. The Washington assets contributed Adjusted Gross Margin of $28.1 million to the logistics segment for the period from January 11, 2019 to December 31, 2019.

Retail. For the year ended December 31, 2019, our retail Adjusted Gross Margin was approximately $126.6 million, an increase of $19.2 million compared to $107.4 million for the year ended December 31, 2018. The increase was primarily due to a 10% increase in fuel margins and higher sales volumes of 7%.

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Refining. For the year ended December 31, 2018, our refining Adjusted Gross Margin was approximately $238.2 million, a decrease of $16.6 million compared to $254.8 million for the year ended December 31, 2017. The decrease in profitability was primarily due to lower refining margins in Hawaii partially offset by improved crack spreads. Feedstock costs at the Hawaii refineries increased approximately 29% due to unfavorable crude oil differentials and increased refined product purchases to meet higher on-island demand and contractual obligations. The decrease was partially offset by a 12% increase in the Hawaii refineries' sales volumes and improved crack spreads in Hawaii and Wyoming. The Singapore crack spread increased 1% from $7.18 per barrel for the year ended December 31, 2017 to $7.22 per barrel for the year ended December 31, 2018. The Wyoming Index increased 4% from $21.80 per barrel for the year ended December 31, 2017 to $22.69 per barrel for the year ended December 31,

2018. Another contributing factor was a decrease in RINs expense of approximately $18.5 million due primarily to our refineries obtaining a small refinery exemption for 2017 during the first quarter of 2018.

Logistics. For the year ended December 31, 2018, our logistics Adjusted Gross Margin was approximately $48.0 million, a decrease of $7.2 million compared to $55.2 million for the year ended December 31, 2017. The decrease was primarily driven by a decrease in barge revenues as a result of lower throughput volume and average prices per throughput barrel, partially offset by an increase in trucking volumes.

Retail. For the year ended December 31, 2018, our retail Adjusted Gross Margin was approximately $107.4 million, an increase of $30.4 million compared to $77.0 million for the year ended December 31, 2017. The increase was primarily due to a 14% increase in sales prices and higher sales volumes of 26%, primarily due to the acquisition of Northwest Retail.

Discussion of Consolidated Results

Year Ended December 31, 2019 Compared to Year Ended December 31, 2018

Revenues. For the year ended December 31, 2019, revenues were $5.4 billion, a $2.0 billion increase compared to $3.4 billion for the year ended December 31, 2018. The increase was primarily the result of the Washington Acquisition and increased sales volumes in Hawaii primarily related to the Par West Acquisition. The Washington Acquisition contributed third-party revenues of $1.2 billion for the period from January 11, 2019 to December 31, 2019. These increases were partially offset by a decrease in Brent crude oil prices. Brent crude oil prices averaged $64.19 per barrel in the year ended December 31, 2019 compared to $71.55 per barrel in the year ended December 31, 2018, with similar decreases experienced for WTI crude oil prices. Refined product sales volumes in Hawaii increased 43% from 83.6 Mbpd in the year ended December 31, 2018 to 119.8 Mbpd in the year ended December 31, 2019 primarily due to the Par West Acquisition. Revenues in our retail segment increased $17.9 million primarily due to higher sales volumes of 7%.

Cost of Revenues (Excluding Depreciation). For the year ended December 31, 2019, cost of revenues (excluding depreciation), was $4.8 billion, a $1.8 billion increase compared to $3.0 billion for the year ended December 31, 2018. The increase was primarily due to the Washington Acquisition and a 43% increase in refined product sales volumes in Hawaii primarily due to the Par West Acquisition. The Washington Acquisition contributed cost of revenues of approximately $1.0 billion for the period from January 11, 2019 to December 31, 2019. These increases were partially offset by the decrease in Brent crude oil prices as discussed above.

Operating Expense (Excluding Depreciation). For the year ended December 31, 2019, operating expense (excluding depreciation) was approximately $312.9 million, an increase of $97.6 million compared to $215.3 million for the year ended December 31, 2018. The increase was primarily due to operating expenses related to the Washington Acquisition, Par West Acquisition, and Northwest Retail Acquisition. The Washington Acquisition contributed operating expenses of $62.3 million for the period from January 11, 2019 to December 31, 2019. The Par West Acquisition contributed operating expenses of $26.1 million for the year ended December 31, 2019. Northwest Retail contributed operating expenses of $20.0 million for the full year ended December 31, 2019, as compared to $15.0 million for the 284-day period of ownership from March 23, 2018 to December 31, 2018. The increase was also due to $2.6 million expenditures incurred in connection with unplanned maintenance at our Par East refinery.

Depreciation, Depletion, and Amortization. For the year ended December 31, 2019, DD&A expense was approximately $86.1 million, an increase of $33.5 million compared to $52.6 million for the year ended December 31, 2018. The increase was primarily due to DD&A on assets acquired as part of the Washington Acquisition and the accelerated depreciation of assets to be replaced during the 2020 Wyoming refinery turnaround.

General and Administrative Expense (Excluding Depreciation). For the year ended December 31, 2019, general and administrative expense (excluding depreciation) was approximately $46.2 million, which is relatively consistent with expense of $47.4 million for the year ended December 31, 2018.

Acquisition and Integration Costs. For the year ended December 31, 2019, we incurred approximately $4.7 million of expenses primarily related to acquisition and integration costs for the Washington Acquisition and the Par West Acquisition. For the year ended December 31, 2018, we incurred approximately $10.3 million of expenses primarily related to acquisition and integration costs for the Northwest Retail Acquisition, Par West Acquisition, and Washington Acquisition. Please read Note 4—Acquisitions to our consolidated financial statements under Item 8 of this Form 10-K for more information.

Interest Expense and Financing Costs, Net. For the year ended December 31, 2019, our interest expense and financing costs were approximately $74.8 million, an increase of $35.0 million compared to $39.8 million for the year ended December 31, 2018. The increase was primarily due to interest expense and financing costs of $24.4 million related to the new

Term Loan B Facility entered into on January 11, 2019, interest expense of $6.3 million on the Washington Refinery Intermediation Agreement, a net increase in our loss on interest rate derivatives of $2.8 million, and interest expense and financing costs of $2.5 million related to the Par Pacific Term Loan entered into on January 9, 2019 and replaced by the Retail Property Term Loan entered into on March 29, 2019. These increases were partially offset by a decrease in interest expense and financing costs of $1.7 million due to the exchange of a portion of our outstanding 5.00% Convertible Senior Notes during 2019. Please read Note 12—Debt to our consolidated financial statements under Item 8 of this Form 10-K for further discussion on our indebtedness.

Change in Value of Common Stock Warrants. For the year ended December 31, 2019, the change in value of common stock warrants resulted in a loss of approximately $3.2 million, a change of $5.0 million compared to a gain of $1.8 million for the year ended December 31, 2018. For the year ended December 31, 2019, our stock price increased from $14.18 per share as of December 31, 2018 to $23.24 per share as of December 31, 2019 which resulted in an increase in the fair value of the common stock warrants. During the year ended December 31, 2018, our stock price decreased from $19.28 per share on December 31, 2017 to $14.18 per share on December 31, 2018, which resulted in a decrease in the value of the common stock warrants.

Change in Value of Contingent Consideration. For the year ended December 31, 2018, the change in value of our contingent consideration liability resulted in a loss of $10.5 million as a result of the final settlement agreement reached with Tesoro. For the year ended December 31, 2019, there were no such changes. Please read Note 16—Commitments and Contingencies to our consolidated financial statements under Item 8 of this Form 10-K for more information.

Debt extinguishment and commitment costs. For the year ended December 31, 2019, our debt extinguishment and commitment costs were approximately $11.6 million and represent the commitment and other fees associated with the financing of the Washington Acquisition and the extinguishment costs associated with the exchange of a portion of our outstanding 5.00% Convertible Senior Notes. For the year ended December 31, 2018, our debt extinguishment and commitment costs were approximately $4.2 million and represent the commitment and other fees associated with the financing of the Washington Acquisition.

Equity Earnings (Losses) from Laramie Energy, LLC. For the year ended December 31, 2019, equity losses from Laramie Energy were approximately $89.8 million, a change of $99.3 million compared to equity earnings of $9.5 million for the year ended December 31, 2018. During the year ended December 31, 2019, we recorded an impairment charge of $81.5 million due to the significant decline in natural gas prices during the second quarter of 2019 and continued deterioration of prices in the third quarter of 2019. The remaining decrease was primarily due to Laramie Energy's net loss associated with lower realized prices. Please read Note 3—Investment in Laramie Energy, LLC to our consolidated financial statements under Item 8 of this Form 10-K for more information.

Income Taxes. For the year ended December 31, 2019, we recorded an income tax benefit of $69.7 million primarily driven by a $64.2 million benefit associated with a partial release of our valuation allowance in connection with the Washington Acquisition. For the year ended December 31, 2018, we recorded an income tax expense of $0.3 million primarily due to deferred tax expense of $0.7 million offset by current federal income tax benefit of $0.3 million. Deferred tax expense for the year ended December 31, 2018 included a benefit of $0.7 million related to the release of valuation allowance due to the impact of the U.S. tax reform legislation on the interest deduction limitation.

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Revenues. For the year ended December 31, 2018, revenues were $3.4 billion, a $1.0 billion increase compared to $2.4 billion for the year ended December 31, 2017. The increase was primarily due to an increase of $0.9 billion in third-party revenues at our refining segment, which was primarily the result of higher crude oil prices and volumes. Brent crude oil prices averaged $71.55 per barrel in the year ended December 31, 2018 compared to $54.82 per barrel in the year ended December 31, 2017, with similar increases experienced for WTI crude oil prices. Refined product sales volumes increased 11% from 90.7 Mbpd in the year ended December 31, 2017 to 100.3 Mbpd in the year ended December 31, 2018. Revenues in our retail segment increased $114.9 million primarily driven by the acquisition of Northwest Retail.

Cost of Revenues (Excluding Depreciation). For the year ended December 31, 2018, cost of revenues (excluding depreciation), was $3.0 billion, a $0.9 billion increase compared to $2.1 billion for the year ended December 31, 2017. The increase was primarily due to higher crude oil prices and volumes as stated above. Cost of revenues (excluding depreciation) in our retail segment increased $84.6 million primarily driven by the acquisition of Northwest Retail.

Operating Expense (Excluding Depreciation). For the year ended December 31, 2018, operating expense (excluding depreciation) was approximately $215.3 million, an increase of $13.3 million compared to $202.0 million for the year ended December 31, 2017. The increase was primarily due to operating expenses related to the Northwest Retail assets, which we acquired on March 23, 2018.

***Depreciation, Depletion, and Amortization*.** For the year ended December 31, 2018, DD&A expense was approximately $52.6 million, an increase of $6.6 million compared to $46.0 million for the year ended December 31, 2017. The increase was primarily due to the acquisition of Northwest Retail on March 23, 2018 and approximately $4.1 million of accelerated depreciation resulting from changes in the estimated useful lives of certain refinery equipment, storage tanks, and leasehold improvements. Northwest Retail contributed $1.9 million of DD&A for the year ended December 31, 2018.

General and Administrative Expense (Excluding Depreciation). For the year ended December 31, 2018, general and administrative expense (excluding depreciation) was approximately $47.4 million, which is relatively consistent with expense of $46.1 million for the year ended December 31, 2017.

Acquisition and Integration Costs. For the year ended December 31, 2018, we incurred approximately $10.3 million of expenses primarily related to acquisition and integration costs for the Northwest Retail Acquisition, the Par West Acquisition, and the Washington Acquisition. Please read Note 4—Acquisitions to our consolidated financial statements under Item 8 of this Form 10-K for more information. For the year ended December 31, 2017, we incurred approximately $0.4 million of integration costs related to the WRC Acquisition completed in July 2016.

***Interest Expense and Financing Costs, Net*.** For the year ended December 31, 2018, our interest expense and financing costs were approximately $39.8 million, an increase of $8.2 million compared to $31.6 million for the year ended December 31, 2017. The increase was primarily due to interest expense of $24.4 million related to the 7.75% Senior Secured Notes issued in December 2017 and increased financing costs of $2.4 million associated with J. Aron deferred payments, partially offset by lower interest expense of $17.4 million related to the debt and credit agreements terminated in December 2017 and a net increase on gains on interest rate derivatives of $0.9 million. Please read Note 12—Debt to our consolidated financial statements under Item 8 of this Form 10-K for further discussion on our indebtedness.

***Change in Value of Common Stock Warrants*.** For the year ended December 31, 2018, the change in value of common stock warrants resulted in a gain of approximately $1.8 million, a change of $3.5 million compared to a loss of $1.7 million for the year ended December 31, 2017. For the year ended December 31, 2018, our stock price decreased from $19.28 per share as of December 31, 2017 to $14.18 per share as of December 31, 2018, which resulted in a decrease in the fair value of the common stock warrants. During the year ended December 31, 2017, our stock price increased from $14.54 per share on December 31, 2016 to $19.28 per share on December 31, 2017, which resulted in an increase in the value of the common stock warrants.

***Change in Value of Contingent Consideration*.** For the year ended December 31, 2018, the change in value of our contingent consideration liability resulted in a loss of $10.5 million as a result of the settlement agreement reached with Tesoro. For the year ended December 31, 2017, there was no change in the value of our contingent consideration liability. Please read Note 16—Commitments and Contingencies to our consolidated financial statements under Item 8 of this Form 10-K for more information.

Debt extinguishment and commitment costs. For the year ended December 31, 2018, our debt extinguishment and commitment costs were approximately $4.2 million and represent the commitment and other fees associated with the financing of the Washington Acquisition. For the year ended December 31, 2017, our debt extinguishment and commitment costs were approximately $8.6 million and represent early termination fees and the acceleration of deferred amortization costs in connection with the termination of the Delayed Draw Term Loan and Bridge Loan Credit Agreement ("Term Loan") during the second quarter of 2017 and the termination and repayment of our outstanding indebtedness under the Hawaii Retail Credit Facilities, the Wyoming Refining Credit Facilities, the Par Wyoming Holdings Credit Agreement, and the J. Aron Forward Sale in the fourth quarter of 2017.

***Equity Earnings (Losses) From Laramie Energy*.** For the year ended December 31, 2018, equity earnings from Laramie Energy were approximately $9.5 million, a change of $8.9 million compared to equity earnings of $18.4 million for the year ended December 31, 2017. The decrease was primarily due to Laramie Energy's loss on derivative instruments of $13.4 million for the year ended December 31, 2018, compared to a gain on derivative instruments of $35.5 million for the same period in 2017. The loss on derivative instruments was partially offset by a 42% increase in Laramie Energy's sales volumes for the year ended December 31, 2018 compared to the same period in 2017. In addition, our ownership percentage decreased from 42.3% to 39.1% on February 28, 2018 due to an investment made by a third party and increased to 46.0% on October 18, 2018 due to Laramie Energy's repurchase of units from certain unitholders.

Income Taxes. For the year ended December 31, 2018, we recorded an income tax expense of $0.3 million primarily due to deferred tax expense of $0.7 million offset by current federal income tax benefit of $0.3 million. Deferred tax expense for the year ended December 31, 2018 included a benefit of $0.7 million related to the release of valuation allowance due to the impact of the U.S. tax reform legislation on the interest deduction limitation. For the year ended December 31, 2017, we recorded an income tax benefit of $1.3 million primarily due to the release of $0.8 million of valuation allowance associated with the U.S. tax reform legislation that converted the Alternative Minimum Tax Credit Carryovers to refundable credits.

Consolidating Condensed Financial Information

On December 21, 2017, Par Petroleum, LLC (the "Issuer") issued its 7.75% Senior Secured Notes due 2025 in a private offering under Rule 144A and Regulation S of the Securities Act. On January 11, 2019, the Issuers (defined below) entered into a term loan and guaranty agreement with Goldman Sachs Bank USA, as administrative agent, and the lenders party thereto with respect to a $250.0 million term loan (the "Term Loan B"). The 7.75% Senior Secured Notes and the Term Loan B were co-issued by Par Petroleum Finance Corp. (together with the Issuer, the "Issuers"), which has no independent assets or operations. The 7.75% Senior Secured Notes and Term Loan B are guaranteed on a senior unsecured basis only as to payment of principal and interest by Par Pacific Holdings, Inc. (the "Parent") and are guaranteed on a senior secured basis by all of the subsidiaries of Par Petroleum, LLC (other than Par Petroleum Finance Corp.).

The following supplemental condensed consolidating financial information reflects (i) the Parent's separate accounts, (ii) Par Petroleum, LLC and its consolidated subsidiaries' accounts (which are all guarantors of the 7.75% Senior Secured Notes and Term Loan B), (iii) the accounts of subsidiaries of the Parent that are not guarantors of the 7.75% Senior Secured Notes or Term Loan B and consolidating adjustments and eliminations, and (iv) the Parent's consolidated accounts for the dates and periods indicated. For purposes of the following condensed consolidating information, the Parent's investment in its subsidiaries is accounted for under the equity method of accounting (dollar amounts in thousands).

	As of December 31, 2019			
	Parent Guarantor	Issuer and Subsidiaries	Non-Guarantor Subsidiaries and Eliminations	Par Pacific Holdings, Inc. and Subsidiaries
ASSETS				
Current assets				
Cash and cash equivalents	$ 6,309	$ 118,812	$ 894	$ 126,015
Restricted cash	743	1,670	—	2,413
Trade accounts receivable	—	228,707	11	228,718
Inventories	—	615,872	—	615,872
Prepaid and other current assets	12,325	46,470	361	59,156
Due from related parties	180,686	—	(180,686)	—
Total current assets	200,063	1,011,531	(179,420)	1,032,174
Property, plant, and equipment				
Property, plant, and equipment	20,961	1,088,230	37,792	1,146,983
Less accumulated depreciation, depletion, and amortization	(12,117)	(170,607)	(2,316)	(185,040)
Property, plant, and equipment, net	8,844	917,623	35,476	961,943
Long-term assets				
Operating lease assets	4,276	434,909	(19,112)	420,073
Investment in Laramie Energy, LLC	—	—	46,905	46,905
Investment in subsidiaries	636,742	—	(636,742)	—
Intangible assets, net	—	21,549	—	21,549
Goodwill	—	193,321	2,598	195,919
Other long-term assets	1,128	20,869	—	21,997
Total assets	$ 851,053	$ 2,599,802	$ (750,295)	$ 2,700,560
LIABILITIES AND STOCKHOLDERS' EQUITY				
Current liabilities				
Current maturities of long-term debt	$ —	$ 10,777	$ 1,520	$ 12,297
Obligations under inventory financing agreements	—	656,162	—	656,162
Accounts payable	2,597	158,323	1,482	162,402
Deferred revenue	—	7,905	—	7,905
Accrued taxes	—	30,745	68	30,813
Operating lease liabilities	698	84,366	(5,065)	79,999
Other accrued liabilities	14,591	72,670	(2,517)	84,744
Due to related parties	125,778	101,936	(227,714)	—
Total current liabilities	143,664	1,122,884	(232,226)	1,034,322
Long-term liabilities				
Long-term debt, net of current maturities	44,783	513,145	41,706	599,634
Common stock warrants	8,206	—	—	8,206
Finance lease liabilities	223	6,004	—	6,227
Operating lease liabilities	5,629	349,327	(14,047)	340,909
Other liabilities	306	120,001	(57,287)	63,020
Total liabilities	202,811	2,111,361	(261,854)	2,052,318
Commitments and contingencies				
Stockholders' equity				
Preferred stock	—	—	—	—
Common stock	533	—	—	533
Additional paid-in capital	715,069	293,006	(293,006)	715,069
Accumulated earnings (deficit)	(67,942)	194,023	(194,023)	(67,942)
Accumulated other comprehensive income	582	1,412	(1,412)	582
Total stockholders' equity	648,242	488,441	(488,441)	648,242
Total liabilities and stockholders' equity	$ 851,053	$ 2,599,802	$ (750,295)	$ 2,700,560

	As of December 31, 2018			
	Parent Guarantor	Issuer and Subsidiaries	Non-Guarantor Subsidiaries and Eliminations	Par Pacific Holdings, Inc. and Subsidiaries
ASSETS				
Current assets				
Cash and cash equivalents	$ 28,701	$ 46,062	$ 313	$ 75,076
Restricted cash	743	—	—	743
Trade accounts receivable	—	159,630	708	160,338
Inventories	—	322,065	—	322,065
Prepaid and other current assets	11,711	17,048	(389)	28,370
Due from related parties	43,928	—	(43,928)	—
Total current assets	85,083	544,805	(43,296)	586,592
Property, plant, and equipment				
Property, plant, and equipment	18,939	630,429	400	649,768
Less accumulated depreciation and depletion	(9,034)	(102,180)	(293)	(111,507)
Property, plant, and equipment, net	9,905	528,249	107	538,261
Long-term assets				
Investment in Laramie Energy, LLC	—	—	136,656	136,656
Investment in subsidiaries	638,975	—	(638,975)	—
Intangible assets, net	—	23,947	—	23,947
Goodwill	—	150,799	2,598	153,397
Other long-term assets	3,334	18,547	—	21,881
Total assets	$ 737,297	$ 1,266,347	$ (542,910)	$ 1,460,734
LIABILITIES AND STOCKHOLDERS' EQUITY				
Current liabilities				
Current maturities of long-term debt	$ —	$ 33	$ —	$ 33
Obligations under inventory financing agreements	—	373,882	—	373,882
Accounts payable	8,312	44,997	1,478	54,787
Deferred revenue	—	6,681	—	6,681
Accrued taxes	—	17,206	50	17,256
Other accrued liabilities	12,349	43,773	(1,560)	54,562
Due to related parties	96,963	9,848	(106,811)	—
Total current liabilities	117,624	496,420	(106,843)	507,201
Long-term liabilities				
Long-term debt, net of current maturities	100,411	292,196	—	392,607
Common stock warrants	5,007	—	—	5,007
Long-term capital lease obligations	475	5,648	—	6,123
Other liabilities	1,451	41,040	(5,024)	37,467
Total liabilities	224,968	835,304	(111,867)	948,405
Commitments and contingencies				
Stockholders' equity				
Preferred stock, $0.01 par value: 3,000,000 shares authorized, none issued	—	—	—	—
Common stock, $0.01 par value; 500,000,000 shares authorized and 46,983,924 shares issued	470	—	—	470
Additional paid-in capital	617,937	345,825	(345,825)	617,937
Accumulated earnings (deficit)	(108,751)	81,715	(81,715)	(108,751)
Accumulated other comprehensive income	2,673	3,503	(3,503)	2,673
Total stockholders' equity	512,329	431,043	(431,043)	512,329
Total liabilities and stockholders' equity	$ 737,297	$ 1,266,347	$ (542,910)	$ 1,460,734

	Year Ended December 31, 2019			
	Parent Guarantor	**Issuer and Subsidiaries**	**Non-Guarantor Subsidiaries and Eliminations**	**Par Pacific Holdings, Inc. and Subsidiaries**
Revenues	$ —	$ 5,401,446	$ 70	$ 5,401,516
Operating expenses				
Cost of revenues (excluding depreciation)	—	4,803,589	—	4,803,589
Operating expense (excluding depreciation)	—	315,659	(2,760)	312,899
Depreciation, depletion, and amortization	2,969	82,843	309	86,121
Loss (gain) on sale of assets, net	—	(37,382)	37,382	—
General and administrative expense (excluding depreciation)	20,017	26,007	199	46,223
Acquisition and integration costs	28	4,676	—	4,704
Total operating expenses	23,014	5,195,392	35,130	5,253,536
Operating income (loss)	(23,014)	206,054	(35,060)	147,980
Other income (expense)				
Interest expense and financing costs, net	(9,952)	(62,098)	(2,789)	(74,839)
Debt extinguishment and commitment costs	(6,091)	(5,354)	(142)	(11,587)
Other income (expense), net	2,303	213	—	2,516
Change in value of common stock warrants	(3,199)	—	—	(3,199)
Equity earnings (losses) from subsidiaries	81,097	—	(81,097)	—
Equity losses from Laramie Energy, LLC	—	—	(89,751)	(89,751)
Total other income (expense), net	64,158	(67,239)	(173,779)	(176,860)
Income (loss) before income taxes	41,144	138,815	(208,839)	(28,880)
Income tax benefit (expense) (1)	(335)	(26,507)	96,531	69,689
Net income (loss)	$ 40,809	$ 112,308	$ (112,308)	$ 40,809
Adjusted EBITDA	$ (17,714)	$ 275,435	$ 2,631	$ 260,352

(1) The income tax benefit (expense) of the Parent Guarantor and Issuer and Subsidiaries is determined using the separate return method. The Non-Guarantor Subsidiaries and Eliminations column includes tax benefits recognized at the Par consolidated level that are primarily associated with changes to the consolidated valuation allowance and other deferred tax balances.

	Year Ended December 31, 2018			
	Parent Guarantor	**Issuer and Subsidiaries**	**Non-Guarantor Subsidiaries and Eliminations**	**Par Pacific Holdings, Inc. and Subsidiaries**
Revenues	$ —	$ 3,410,155	$ 573	$ 3,410,728
Operating expenses				
Cost of revenues (excluding depreciation)	—	3,002,718	398	3,003,116
Operating expense (excluding depreciation)	—	215,284	—	215,284
Depreciation, depletion, and amortization	4,092	48,513	37	52,642
General and administrative expense (excluding depreciation)	20,721	26,370	335	47,426
Acquisition and integration costs	10,118	201	—	10,319
Total operating expenses	34,931	3,293,086	770	3,328,787
Operating income (loss)	(34,931)	117,069	(197)	81,941
Other income (expense)				
Interest expense and financing costs, net	(10,867)	(28,897)	(4)	(39,768)
Debt extinguishment and commitment costs	—	(4,224)	—	(4,224)
Other income (expense), net	1,155	(99)	(10)	1,046
Change in value of common stock warrants	1,801	—	—	1,801
Change in value of contingent consideration	—	(10,500)	—	(10,500)
Equity losses from subsidiaries	81,942	—	(81,942)	—
Equity earnings (losses) from Laramie Energy, LLC	—	—	9,464	9,464
Total other income (expense), net	74,031	(43,720)	(72,492)	(42,181)
Income (loss) before income taxes	39,100	73,349	(72,689)	39,760
Income tax benefit (expense) (1)	327	(15,567)	14,907	(333)
Net income (loss)	$ 39,427	$ 57,782	$ (57,782)	$ 39,427
Adjusted EBITDA	$ (19,566)	$ 151,856	$ (170)	$ 132,120

(1) The income tax benefit (expense) of the Parent Guarantor and Issuer and Subsidiaries is determined using the separate return method. The Non-Guarantor Subsidiaries and Eliminations column includes tax benefits recognized at the Par consolidated level that are primarily associated with changes to the consolidated valuation allowance and other deferred tax balances.

	Year Ended December 31, 2017			
	Parent Guarantor	**Issuer and Subsidiaries**	**Non-Guarantor Subsidiaries and Eliminations**	**Par Pacific Holdings, Inc. and Subsidiaries**
Revenues	$ —	$ 2,442,188	$ 878	$ 2,443,066
Operating expenses				
Cost of revenues (excluding depreciation)	—	2,053,757	870	2,054,627
Operating expense (excluding depreciation)	—	202,019	(3)	202,016
Depreciation, depletion, and amortization	2,871	42,368	750	45,989
Impairment expense	—	—	—	—
General and administrative expense (excluding depreciation)	18,922	26,967	189	46,078
Acquisition and integration costs	192	—	203	395
Total operating expenses	21,985	2,325,111	2,009	2,349,105
Operating income (loss)	(21,985)	117,077	(1,131)	93,961
Other income (expense)				
Interest expense and financing costs, net	(13,709)	(17,923)	—	(31,632)
Debt extinguishment and commitment costs	(1,804)	(6,829)	—	(8,633)
Other income (expense), net	631	154	126	911
Change in value of common stock warrants	(1,674)	—	—	(1,674)
Equity losses from subsidiaries	111,162	—	(111,162)	—
Equity earnings (losses) from Laramie Energy, LLC	—	—	18,369	18,369
Total other income (expense), net	94,606	(24,598)	(92,667)	(22,659)
Income (loss) before income taxes	72,621	92,479	(93,798)	71,302
Income tax benefit (expense) (1)	—	(29,079)	30,398	1,319
Net income (loss)	$ 72,621	$ 63,400	$ (63,400)	$ 72,621
Adjusted EBITDA	$ (17,091)	$ 157,910	$ (52)	$ 140,767

(1) The income tax benefit (expense) of the Parent Guarantor and Issuer and Subsidiaries is determined using the separate return method. The Non-Guarantor Subsidiaries and Eliminations column includes certain tax benefits recognized at the Par consolidated level that are primarily associated with changes to the consolidated valuation allowance and other deferred tax balances.

Non-GAAP Financial Measures

Adjusted EBITDA for the supplemental consolidating condensed financial information, which is segregated at the "Parent Guarantor," "Issuer and Subsidiaries," and "Non-Guarantor Subsidiaries and Eliminations" levels, is calculated in the same manner as for the Par Pacific Holdings, Inc. Adjusted EBITDA calculations. See "Results of Operations — Non-GAAP Performance Measures — Adjusted Net Income (Loss) and Adjusted EBITDA" above.

The following tables present a reconciliation of Adjusted EBITDA to the most directly comparable GAAP financial measure, net income (loss), on a historical basis for the periods indicated (in thousands):

	Year Ended December 31, 2019			
	Parent Guarantor	Issuer and Subsidiaries	Non-Guarantor Subsidiaries and Eliminations	Par Pacific Holdings, Inc. and Subsidiaries
Net income (loss)	$ 40,809	$ 112,308	$ (112,308)	$ 40,809
Inventory valuation adjustment	—	13,441	—	13,441
RINs gain in excess of net obligation	—	(3,398)	—	(3,398)
Unrealized loss on derivatives	—	8,988	—	8,988
Acquisition and integration costs	28	4,676	—	4,704
Debt extinguishment and commitment costs	6,091	5,354	142	11,587
Changes in valuation allowance and other deferred tax items (1)	—	—	(68,792)	(68,792)
Change in value of common stock warrants	3,199	—	—	3,199
Loss (gain) on sale of assets, net	—	(37,382)	37,382	—
Impairments of Laramie Energy, LLC (2)	—	—	83,152	83,152
Par's share of Laramie Energy's unrealized loss (gain) on derivatives (2)	—	—	(1,969)	(1,969)
Depreciation, depletion, and amortization	2,969	82,843	309	86,121
Interest expense and financing costs, net	9,952	62,098	2,789	74,839
Equity losses (earnings) from Laramie Energy, LLC, excluding Par's share of unrealized loss (gain) on derivatives and impairment losses	—	—	8,568	8,568
Equity losses (income) from subsidiaries	(81,097)	—	81,097	—
Income tax expense (benefit)	335	26,507	(27,739)	(897)
Adjusted EBITDA	$ (17,714)	$ 275,435	$ 2,631	$ 260,352

	Year Ended December 31, 2018			
	Parent Guarantor	Issuer and Subsidiaries	Non-Guarantor Subsidiaries and Eliminations	Par Pacific Holdings, Inc. and Subsidiaries
Net income (loss)	$ 39,427	$ 57,782	$ (57,782)	$ 39,427
Inventory valuation adjustment	—	(16,875)	—	(16,875)
RINs loss in excess of net obligation	—	4,544	—	4,544
Unrealized loss (gain) on derivatives	—	(1,497)	—	(1,497)
Acquisition and integration costs	10,118	201	—	10,319
Debt extinguishment and commitment costs	—	4,224	—	4,224
Changes in valuation allowance and other deferred tax items (1)	—	—	(660)	(660)
Change in value of common stock warrants	(1,801)	—	—	(1,801)
Change in value of contingent consideration	—	10,500	—	10,500
Par's share of Laramie Energy's unrealized loss (gain) on derivatives (2)	—	—	1,158	1,158
Depreciation, depletion, and amortization	4,092	48,513	37	52,642
Interest expense and financing costs, net	10,867	28,897	4	39,768
Equity losses (earnings) from Laramie Energy, LLC, excluding Par's share of unrealized loss (gain) on derivatives	—	—	(10,622)	(10,622)
Equity losses from subsidiaries	(81,942)	—	81,942	—
Income tax expense (benefit)	(327)	15,567	(14,247)	993
Adjusted EBITDA	$ (19,566)	$ 151,856	$ (170)	$ 132,120

	Year Ended December 31, 2017			
	Parent Guarantor	Issuer and Subsidiaries	Non-Guarantor Subsidiaries and Eliminations	Par Pacific Holdings, Inc. and Subsidiaries
Net income (loss)	$ 72,621	$ 63,400	$ (63,400)	$ 72,621
Inventory valuation adjustment	—	(1,461)	—	(1,461)
RINs loss in excess of net obligation	—	—	—	—
Unrealized loss (gain) on derivatives	—	(623)	—	(623)
Acquisition and integration costs	192	—	203	395
Debt extinguishment and commitment costs	1,804	6,829	—	8,633
Change in value of common stock warrants	1,674	—	—	1,674
Severance costs	1,200	395	—	1,595
Par's share of Laramie Energy's unrealized loss (gain) on derivatives (2)	—	—	(19,568)	(19,568)
Depreciation, depletion, and amortization	2,871	42,368	750	45,989
Interest expense and financing costs, net	13,709	17,923	—	31,632
Equity losses (earnings) from Laramie Energy, LLC, excluding Par's share of unrealized loss (gain) on derivatives	—	—	1,199	1,199
Equity losses from subsidiaries	(111,162)	—	111,162	—
Income tax expense (benefit)	—	29,079	(30,398)	(1,319)
Adjusted EBITDA	$ (17,091)	$ 157,910	$ (52)	$ 140,767

(1) Includes increases in (releases of) our valuation allowance associated with business combinations and changes in deferred tax assets and liabilities that are not offset by a change in the valuation allowance. These tax expenses (benefits) are included in Income tax expense (benefit) on our consolidated statements of operations.

(2) Includes impairment losses on our investment in Laramie Energy and our share of Laramie Energy's asset impairment losses in excess of our basis difference. These impairment losses and our share of Laramie Energy's unrealized loss (gain) on derivatives are included in Equity earnings (losses) from Laramie Energy, LLC on our consolidated statements of operations.

Liquidity and Capital Resources

Our liquidity and capital requirements are primarily a function of our debt maturities and debt service requirements and contractual obligations, capital expenditures, turnaround outlays, and working capital needs. Examples of working capital needs include purchases and sales of commodities and associated margin and collateral requirements, facility maintenance costs, and other costs such as payroll. Our primary sources of liquidity are cash flows from operations, cash on hand, amounts available under our credit agreements, and access to capital markets.

Our liquidity position as of December 31, 2019 was $241.4 million and consisted of $233.4 million at Par Petroleum, LLC and subsidiaries, $7.9 million at Par Pacific Holdings, and $0.1 million at all our other subsidiaries.

As of December 31, 2019, we had access to the J. Aron Deferred Payment Arrangement, the ABL Credit Facility, the MLC receivable advances, and cash on hand of $126.0 million. In addition, we have the Supply and Offtake Agreements with J. Aron and the Washington Refinery Intermediation Agreement, which are used to finance the majority of the inventory at our Hawaii and Washington refineries, respectively. Generally, the primary uses of our capital resources have been in the operations of our refining and retail segments, payments related to acquisitions, and to repay or refinance indebtedness.

We believe our cash flows from operations and available capital resources will be sufficient to meet our current capital and turnaround expenditures, working capital, and debt service requirements for the next 12 months. We may seek to raise additional debt or equity capital to fund any other significant changes to our business or to refinance existing debt. We cannot offer any assurances that such capital will be available in sufficient amounts or at an acceptable cost.

We may from time to time seek to retire or purchase our outstanding 5.00% Convertible Senior Notes, our 7.75% Senior Secured Notes, or our common stock through cash purchases and/or exchanges for equity securities, in open market purchases, privately negotiated transactions, or otherwise. Such repurchases or exchanges, if any, will depend on prevailing market conditions, our liquidity requirements, contractual restrictions, and other factors. The amounts involved may be material.

Debt Activity

We had the following significant debt issuances and amendments during the years ended December 31, 2019, 2018, and 2017:

- On November 1, 2019, we and MLC amended the Washington Refinery Intermediation Agreement and extended the term through June 30, 2021, with an option for us to terminate as early as March 31, 2021.

- During May, June, and December 2019, we entered into privately negotiated exchange agreements with a limited number of holders (the "Noteholders") to repurchase $66.3 million in aggregate principal amount of the 5.00% Convertible Senior Notes held by the Noteholders for an aggregate of $18.6 million in cash and approximately 3.2 million shares of our common stock with a fair value of $74.3 million. As of December 31, 2019, the remaining outstanding principal amount of the 5.00% Convertible Senior Notes was $48.7 million, the unamortized discount and deferred financing cost was $3.9 million, and the carrying amount of the liability component was $44.8 million.

- On March 29, 2019, Par Pacific Hawaii Property Company, LLC ("Par Property LLC"), our wholly owned subsidiary, entered into the Retail Property Term Loan with the Bank of Hawaii ("BOH"), which provided a term loan in the principal amount of $45.0 million. The proceeds from the Retail Property Term Loan were used to repay and terminate the Par Pacific Term Loan Agreement (as defined below). As of December 31, 2019, the outstanding principal on the Retail Property Term Loan was $44.0 million.

- On January 11, 2019, Par Petroleum, LLC and Par Petroleum Finance Corp., both our wholly owned subsidiaries, entered into the Term Loan B Facility with Goldman Sachs Bank USA, as administrative agent, and the lenders party thereto from time to time. Pursuant to the Term Loan B Facility, the lenders made a term loan to the borrowers in the amount of $250.0 million ("Term Loan B"). We are required to pay principal of $3.1 million quarterly. The proceeds from the Term Loan B were used to fund the Washington Acquisition. As of December 31, 2019, the outstanding principal on the Term Loan B was $240.6 million.

- On January 9, 2019, we entered into the Par Pacific Term Loan Agreement with BOH. Pursuant to the Par Pacific Term Loan Agreement, BOH made a loan to the Company in the amount of $45.0 million (the "Par Pacific Term Loan"). The proceeds from the Par Pacific Term Loan Agreement were used to fund the Washington Acquisition. On March 29, 2019, we terminated and repaid all amounts outstanding under the Par Pacific Term Loan Agreement using the proceeds of the Retail Property Term Loan.

- On December 5, 2018, we amended the Supply and Offtake Agreements to account for additional processing capacity expected to be provided through the Par West Acquisition. The December 5, 2018 amendment to the Supply and Offtake Agreements also (i) required us to increase our margin requirements by an aggregate $2.5 million by making certain additional margin payments on December 19, 2018, March 1, 2019, and June 3, 2019, and (ii) only allows dividends, payments, or other distributions with respect to any equity interests in Par Hawaii Refining, LLC ("PHR") in limited and restricted circumstances.

- On September 27, 2018, PHL (which includes the assets of the dissolved entity formerly known as Mid Pac Petroleum, LLC), our wholly owned subsidiary, entered into the Mid Pac Term Loan with American Savings Bank, FSB, which provided a term loan of up to approximately $1.5 million. We received the proceeds on October 18, 2018, which we used to purchase certain retail property.

- On December 21, 2017, Par Petroleum, LLC and Par Petroleum Finance Corp., both our wholly owned subsidiaries, completed the issuance and sale of $300 million in aggregate principal amount of 7.75% Senior Secured Notes due 2025 in a private placement under Rule 144A and Regulation S of the Securities Act of 1933. The net proceeds of $289.2 million (net of financing costs and original issue discount of 1%) from the sale were used to repay our outstanding indebtedness under the Hawaii Retail Credit Facilities, the Wyoming Refining Credit Facilities, the Par Wyoming Holdings Credit Agreement, and the J. Aron Forward Sale and for general corporate purposes.

- On December 21, 2017, in connection with the issuance of the 7.75% Senior Secured Notes, the ABL Borrowers entered into the ABL Credit Facility dated as of December 21, 2017, with certain lenders and Bank of America, N.A., as administrative agent and collateral agent. The ABL Credit Facility provides for a revolving credit facility that provides for revolving loans and for the issuance of letters of credit (the "ABL Revolver"). On July 24, 2018, we amended the ABL Credit Facility to increase the maximum principal amount at any time outstanding of the ABL Revolver by $10 million to $85 million, subject to a borrowing base. The ABL Revolver had no outstanding balance and a borrowing base of approximately $57.6 million at December 31, 2019.

- On June 30, 2017, we fully repaid and terminated the Term Loan. We recorded debt extinguishment costs of approximately $1.8 million related to unamortized deferred financing costs associated with the Term Loan in the year ended December 31, 2017.

- On July 14, 2016, in connection with the WRC Acquisition, Par Wyoming Holdings, LLC, our indirect wholly owned subsidiary, entered into the Par Wyoming Holdings Credit Agreement with certain lenders and Chambers Energy Management, LP, as agent, which provided for a single advance secured term loan to our subsidiary in the amount of $65.0 million (the "Par Wyoming Holdings Term Loan") at the closing of the WRC Acquisition. The proceeds of the Par Wyoming Holdings Term Loan were used to pay a portion of the consideration for the WRC Acquisition, to pay certain fees and closing costs, and for general corporate purposes. Upon issuance of the 7.75% Senior Secured Notes on December 21, 2017, we repaid in full and terminated the Par Wyoming Holdings Credit Agreement.

- On July 14, 2016, in connection with the WRC Acquisition, we assumed debt consisting of term loans of $58.0 million and revolving loans of $10.1 million under a Third Amended and Restated Loan Agreement dated as of April 30, 2015 (as amended, the "Wyoming Refining Credit Facilities"), with Bank of America, N.A. The Wyoming Refining Credit Facilities also provided for a revolving credit facility in the maximum principal amount at any time outstanding of $30.0 million, subject to a borrowing base, which provided for revolving loans and for the issuance of letters of credit. Upon issuance of the 7.75% Senior Secured Notes on December 21, 2017, we repaid in full and terminated the Wyoming Refining Credit Facilities.

- On December 17, 2015, PHL, which includes assets previously owned by the dissolved entities Mid Pac Petroleum, LLC and HIE Retail, LLC, entered into the Hawaii Retail Credit Facilities consisting of a revolving credit facility up to $5.0 million ("Hawaii Retail Revolving Credit Facilities"), which provided for revolving loans and for the issuance of letters of credit and term loans ("Hawaii Retail Term Loans") in the aggregate principal amount of $110 million. The proceeds of the Hawaii Retail Term Loans were used to repay existing indebtedness under PHL's then existing credit agreements, to pay transaction fees and expenses, and to facilitate a cash distribution to us. Upon issuance of the 7.75% Senior Secured Notes on December 21, 2017, we repaid in full and terminated the Hawaii Retail Revolving Credit Facilities.

- As part of the May 8, 2017 amendment to the Supply and Offtake Agreements, we also entered into a $30 million forward sale of certain monthly volumes of jet fuel to be delivered to J. Aron over the remaining amended term ("J. Aron Forward Sale"). The proceeds from the J. Aron Forward Sale were used to pay a portion of the outstanding balance on the Term Loan. Upon issuance of the 7.75% Senior Secured Notes on December 21, 2017, we repaid in full and terminated the J. Aron Forward Sale.

Please read Note 12—Debt to our consolidated financial statements under Item 8 of this Form 10-K for further discussion on our debt agreements.

Cash Flows

The following table summarizes cash activities for the years ended December 31, 2019, 2018, and 2017 (in thousands):

	Years Ended December 31,		
	2019	2018	2017
Net cash provided by (used in) operating activities	$ 105,630	$ 90,620	$ 106,483
Net cash used in investing activities	(353,229)	(175,821)	(31,673)
Net cash provided by (used in) financing activities	300,208	41,943	(4,751)

Net cash provided by operating activities was approximately $105.6 million for the year ended December 31, 2019, which resulted from net income of approximately $40.8 million and non-cash charges to operations of approximately $148.7 million, offset by net cash used for changes in operating assets and liabilities of approximately $83.9 million. The change in our operating assets and liabilities for the year ended December 31, 2019 was primarily due to increased inventories at our Hawaii and Washington refineries driven by higher inventory volumes and prices, partially offset by an increase in our obligations under inventory financing agreements. Net cash provided by operating activities was approximately $90.6 million for the year ended December 31, 2018, which resulted from net income of approximately $39.4 million and non-cash charges to operations of approximately $61.7 million, offset by net cash used for changes in operating assets and liabilities of approximately $10.5 million. Net cash provided by operating activities was approximately $106.5 million for the year ended December 31, 2017, which resulted from net income of approximately $72.6 million and non-cash charges to operations of approximately $50.1 million, offset by net cash used for changes in operating assets and liabilities of approximately $16.2 million.

For the year ended December 31, 2019, net cash used in investing activities was approximately $353.2 million and primarily related to $273.4 million for the Washington Acquisition and additions to property, plant, and equipment totaling approximately $83.9 million. Net cash used in investing activities was approximately $175.8 million for the year ended December 31, 2018 and was primarily related to $74.3 million for the Northwest Retail Acquisition, $53.9 million for the Par West Acquisition, and additions to property, plant, and equipment totaling approximately $48.4 million. Net cash used in investing activities was approximately $31.7 million for the year ended December 31, 2017 and was primarily related to additions to property, plant, and equipment totaling approximately $31.7 million.

Net cash provided by financing activities for the year ended December 31, 2019 was approximately $300.2 million and consisted primarily of proceeds from net borrowings on our debt agreements, J. Aron deferred payment arrangement, and MLC receivable advances of $313.0 million, and the exercise of employee stock options of $8.2 million, offset by deferred loan costs of $13.5 million and payments of $8.1 million in commitment and other fees related to the funding for the Washington Acquisition and the financing costs related to the repurchase and cancellation of a portion of our 5.00% Convertible Senior Notes. Net cash provided by financing activities for the year ended December 31, 2018 of approximately $41.9 million consisted primarily of proceeds from net repayments of borrowings and net borrowings on our deferred payment arrangement of $27.3 million and the issuance of common stock totaling approximately $19.3 million, offset by the payment of $3.4 million in commitment and other fees related to the funding for the Washington Acquisition. Net cash used in financing activities for the year ended December 31, 2017 of approximately $4.8 million consisted primarily of proceeds from net borrowings and net payments on our deferred payment arrangement of $10.7 million, offset by deferred loan costs of $10.1 million and payments for early termination of financing agreements of $4.4 million.

Capital Expenditures and Turnaround Costs

Our deferred turnaround costs and capital expenditures, excluding acquisitions, for the year ended December 31, 2019, totaled approximately $93.7 million and were primarily related to the second phase of our diesel hydrotreater construction at our Par East refinery, the first phase of a project to allow for storage and throughput of renewable fuels at our Washington refinery, equipment purchases and pre-engineering work in preparation for the 2020 turnarounds at our refineries, a 2019 turnaround at the newly acquired Par West refinery, construction of the tie-in connecting our SPM to the IES crude oil pipeline for Hawaii logistics, and other capital projects and scheduled maintenance across our operating segments. Our capital expenditures and deferred turnaround costs budget for 2020 ranges from $120 to $135 million and primarily relates to the second phase of a Washington renewables project, equipment purchases and engineering work related to the execution of the 2020 turnarounds at our Par East and Wyoming refineries and in preparation for the 2021 turnaround at our Washington refinery, tank compliance construction and repairs within our Wyoming logistics network, and scheduled maintenance and other capital projects.

We also continue to seek strategic investments in business opportunities, but the amount and timing of those investments are not predictable.

Contractual Obligations

We have various contractual obligations and financial commitments in the normal course of our operations and financing activities. Contractual obligations include future cash payments required under existing contractual arrangements, such as debt and lease agreements. These obligations may result from both general financing activities and from commercial arrangements that are directly related to our operating activities. The following table summarizes our contractual obligations as of December 31, 2019. Cash obligations reflected in the table below are not discounted.

	Total	Less than 1 Year	1 - 3 Years	3 - 5 Years	More than 5 Years
			(in thousands)		
Long-term debt (including current portion)	$ 634,737	$ 14,054	$ 76,972	$ 64,339	$ 479,372
Interest payments on debt	275,407	50,486	93,643	86,395	44,883
Operating leases (1)	583,090	109,727	135,950	96,425	240,988
Finance leases (1)	9,623	2,247	2,969	2,403	2,004
Purchase commitments	1,100,459	1,096,162	3,144	500	653

(1) Additionally, we have $9.0 million and $1.2 million in future undiscounted cash flows for three operating leases and three finance leases, respectively, that have not yet commenced. These leases are expected to commence when the lessor has made the equipment or location available to the Company to operate or begin construction, respectively.

Long-Term Debt (including Current Portion). Long-term debt includes the scheduled principal payments related to our outstanding debt obligations and letters of credit. Please read Note 12—Debt to our consolidated financial statements under Item 8 of this Form 10-K for further discussion.

Interest Payments on Debt. Interest payments on debt represent estimated periodic interest payment obligations associated with our outstanding debt obligations using interest rates in effect as of December 31, 2019. Please read Note 12—Debt to our consolidated financial statements under Item 8 of this Form 10-K for further discussion.

Operating Leases. Operating leases primarily include obligations associated with the lease of land, office space, retail facilities, and other facilities used in the storage and transportation of crude oil and refined products. Please read Note 15—Leases to our consolidated financial statements under Item 8 of this Form 10-K for further discussion.

Finance Leases. Finance leases primarily include obligations associated with the lease of retail facilities and vehicles. Please read Note 15—Leases to our consolidated financial statements under Item 8 of this Form 10-K for further discussion.

Purchase Commitments. Purchase commitments primarily consist of contracts executed as of December 31, 2019 for the purchase of crude oil for use at our refineries that are scheduled for delivery in 2020.

Commitments and Contingencies

Supply and Offtake Agreements. On June 1, 2015, we entered into several agreements with J. Aron to support the operations of our Hawaii refineries (the "Supply and Offtake Agreements"). On May 8, 2017, we and J. Aron amended the Supply and Offtake Agreements and extended the term through May 31, 2021 with a one-year extension option upon mutual agreement of the parties. The Supply and Offtake Agreements were amended and restated on December 21, 2017 in connection with the issuance of the 7.75% Senior Secured Notes and the entry into the ABL Credit Facility. On June 27, 2018, we and J. Aron amended the Supply and Offtake Agreements to increase the amount that we may defer under the deferred payment arrangement. On December 5, 2018, we amended the Supply and Offtake Agreements to account for additional processing capacity expected to be provided through the Par West Acquisition. Please read Note 11—Inventory Financing Agreements to our consolidated financial statements under Item 8 of this Form 10-K for more information.

Washington Refinery Intermediation Agreement. In connection with the consummation of the Washington Acquisition on January 11, 2019, we assumed the Washington Refinery Intermediation Agreement with MLC to support the operations of our Washington refinery. On November 1, 2019, we and MLC amended the Washington Refinery Intermediation Agreement and extended the term through June 30, 2021, with an option for us to early terminate as early as March 31, 2021. Please read Note 11—Inventory Financing Agreements to our consolidated financial statements under Item 8 of this Form 10-K for more information.

Environmental Matters. Our operations and Laramie Energy's oil and gas exploration and production operations in which we have a working interest are subject to extensive and periodically-changing federal, state, and local environmental laws and regulations governing air emissions, wastewater discharges, and solid and hazardous waste management activities. Many of these laws and regulations are becoming increasingly stringent and the cost of compliance can be expected to increase over time. Our policy is to accrue environmental and clean-up related costs of a non-capital nature when it is probable that a liability has been incurred and the amount can be reasonably estimated. Such estimates may be subject to revision in the future as regulations and other conditions change.

Periodically, we receive communications from various federal, state, and local governmental authorities asserting violations of environmental laws and/or regulations. These governmental entities may also propose or assess fines or require corrective actions for these asserted violations. We intend to respond in a timely manner to all such communications and to take appropriate corrective action. Except as disclosed below, we do not anticipate that any such matters currently asserted will have a material impact on our financial condition, results of operations, or cash flows.

Regulation of Greenhouse Gases

The EPA regulates GHG under the CAA. New construction or material expansions that meet certain GHG emissions thresholds will likely require that, among other things, a GHG permit be issued in accordance with the federal CAA regulations and we will be required, in connection with such permitting, to undertake a technology review to determine appropriate controls to be implemented with the project in order to reduce GHG emissions.

Furthermore, the EPA has in the past begun developing refinery-specific GHG regulations and performance standards that are expected to impose GHG emission limits and/or technology requirements. If adopted, these control requirements may affect a wide range of refinery operations. Any such controls could result in material increased compliance costs, additional operating restrictions for our business, and an increase in cost of the products we produce, which could have a material adverse effect on our financial position, results of operations, or cash flows.

Additionally, the EPA's final rule updating standards that control toxic air emissions from petroleum refineries imposed additional controls and monitoring requirements on flaring operations, storage tanks, sulfur recovery units, delayed coking units and required fenceline monitoring. Compliance with this rule has not had a material impact on our financial condition, results of operations, or cash flows to date.

In 2007, the State of Hawaii passed Act 234, which required that GHG emissions be rolled back on a statewide basis to 1990 levels by the year 2020. In June of 2014, the Hawaii Department of Health ("DOH") adopted regulations that require each major facility to reduce CO_2 emissions by 16% by 2020 relative to a calendar year 2010 baseline (the first year in which GHG emissions were reported to the EPA under 40 CFR Part 98). The Hawaii refineries' capacity to materially reduce fuel use and GHG emissions is limited because most energy conservation measures have already been implemented over the past 20 years. Hawaii's regulation allows for "partnering" with other facilities (principally power plants) that have already dramatically reduced GHG emissions or are on schedule to reduce CO_2 emissions in order to comply with the state's Renewable Portfolio Standards. The DOH's GHG regulation allows, and the Hawaii refineries submitted, a GHG reduction plan, which establishes a combined GHG limit between the Par East and Par West refineries and includes an assessment of alternatives which demonstrates that additional reductions are not cost-effective or necessary because the State of Hawaii has already reached the 1990 levels according to a report prepared by the DOH in January 2019.

Fuel Standards

In 2007, the U.S. Congress passed the Energy Independence and Security Act of 2007 (the "EISA") which, among other things, set a target fuel economy standard of 35 miles per gallon for the combined fleet of cars and light trucks in the U.S. by model year 2020 and contained an expanded Renewable Fuel Standard (the "RFS"). In August 2012, the EPA and National Highway Traffic Safety Administration ("NHTSA") jointly adopted regulations that establish an average industry fuel economy of 54.5 miles per gallon by model year 2025. On August 8, 2018, the EPA and NHTSA jointly proposed to revise existing fuel economy standards for model years 2021-2025 and to set standards for 2026 for the first time. The agencies have not yet issued a final rule revising the fuel economy standards. Although the revised fuel economy standards are expected to be less stringent than the initial standards for model years 2021-2025, it is uncertain whether the revised standards will increase year over year. Higher fuel economy standards have the potential to reduce demand for our refined transportation fuel products.

Under EISA, the RFS requires an increasing amount of renewable fuel to be blended into the nation’s transportation fuel supply, up to 36.0 billion gallons by 2022. In the near term, the RFS will be satisfied primarily with fuel ethanol blended into gasoline. We, and other refiners subject to the RFS, may meet the RFS requirements by blending the necessary volumes of renewable fuels produced by us or purchased from third parties. To the extent that refiners will not or cannot blend renewable fuels into the products they produce in the quantities required to satisfy their obligations under the RFS program, those refiners must purchase renewable credits, referred to as Renewable Identification Numbers (“RINs”), to maintain compliance. To the extent that we exceed the minimum volumetric requirements for blending of renewable fuels, we have the option of retaining these RINs for current or future RFS compliance or selling those RINs on the open market. The RFS may present production and logistics challenges for both the renewable fuels and petroleum refining and marketing industries in that we may have to enter into arrangements with other parties or purchase D3 waivers from the EPA to meet our obligations to use advanced biofuels, including biomass-based diesel and cellulosic biofuel, with potentially uncertain supplies of these new fuels.

In October 2010, the EPA issued a partial waiver decision under the federal CAA to allow for an increase in the amount of ethanol permitted to be blended into gasoline from 10% (“E10”) to 15% (“E15”) for 2007 and newer light duty motor vehicles. In January 2011, the EPA issued a second waiver for the use of E15 in vehicles model years 2001-2006. In 2019, the EPA approved year-round sales of E15. There are numerous issues, including state and federal regulatory issues, which need to be addressed before E15 can be marketed on a large scale for use in traditional gasoline engines; however, increased renewable fuel in the nation’s transportation fuel supply could reduce demand for our refined products.

In March 2014, the EPA published a final Tier 3 gasoline standard that requires, among other things, that gasoline contain no more than 10 parts per million (“ppm”) sulfur on an annual average basis and no more than 80 ppm sulfur on a per-gallon basis. The standard also lowers the allowable benzene, aromatics, and olefins content of gasoline. The effective date for the new standard was January 1, 2017, however, approved small volume refineries had until January 1, 2020 to meet the standard. The Par East refinery was required to comply with Tier 3 gasoline standards within 30 months of June 21, 2016, the date it was disqualified from small volume refinery status. On March 19, 2015, the EPA confirmed the small refinery status of our Wyoming refinery. The Par East refinery, our Wyoming refinery, and our Washington refinery, acquired in January 2019, were all granted small refinery status by the EPA for 2018. As of January 1, 2020, all four of our refineries were compliant with the final Tier 3 gasoline standard.

Beginning on June 30, 2014, new sulfur standards for fuel oil used by marine vessels operating within 200 miles of the U.S. coastline (which includes the entire Hawaiian Island chain) was lowered from 10,000 ppm (1%) to 1,000 ppm (0.1%). The sulfur standards began at the Hawaii refineries and were phased in so that by January 1, 2015, they were to be fully aligned with the International Marine Organization (“IMO”) standards and deadline. The more stringent standards apply universally to both U.S. and foreign-flagged ships. Although the marine fuel regulations provided vessel operators with a few compliance options such as installation of on-board pollution controls and demonstration unavailability, many vessel operators will be forced to switch to a distillate fuel while operating within the Emission Control Area (“ECA”). Beyond the 200 mile ECA, large ocean vessels are still allowed to burn marine fuel with up to 3.5% sulfur. Our Hawaii refineries are capable of producing the 1% sulfur residual fuel oil that was previously required within the ECA. Although our Hawaii refineries remain in a position to supply vessels traveling to and through Hawaii, the market for 0.1% sulfur distillate fuel and 3.5% sulfur residual fuel is much more competitive.

In addition to U.S. fuels requirements, the IMO has also adopted newer standards that further reduce the global limit on sulfur content in maritime fuels to 0.5% beginning in 2020 (“IMO 2020”). Like the rest of the refining industry, we have been focused on meeting these standards and may incur costs in producing lower-sulfur fuels.

There will be compliance costs and uncertainties regarding how we will comply with the various requirements contained in the EISA, RFS, IMO 2020, and other fuel-related regulations. We may experience a decrease in demand for refined petroleum products due to an increase in combined fleet mileage or due to refined petroleum products being replaced by renewable fuels.

Wyoming Refinery and Recent Acquisitions

Our Wyoming refinery is subject to a number of consent decrees, orders, and settlement agreements involving the EPA and/or the Wyoming Department of Environmental Quality, some of which date back to the late 1970s and several of which remain in effect, requiring further actions at the Wyoming refinery. Our recent acquisition of the Par West refinery in Hawaii and the Washington Acquisition also subject us to additional environmental compliance costs. Please read Note 16—Commitments and Contingencies to our consolidated financial statements under Item 8 of this Form 10-K for more information.

Environmental Agreement

On September 25, 2013, Par Petroleum, LLC, Tesoro, and PHR entered into an Environmental Agreement (“Environmental Agreement”), which allocated responsibility for known and contingent environmental liabilities related to the acquisition of PHR, including the Consent Decree. Please read Note 16—Commitments and Contingencies to our consolidated financial statements under Item 8 of this Form 10-K for more information.

Bankruptcy Matters. We emerged from the reorganization of Delta Petroleum Corporation ("Delta") on August 31, 2012 ("Emergence Date") when the plan of reorganization ("Plan") was consummated. Please read "Item 1. — Business — Bankruptcy and Plan of Reorganization" of this Form 10-K for more information.

Off-Balance Sheet Arrangements

We are guarantors of Laramie Energy's credit facility, with recourse limited to the pledge of our equity interest in our wholly owned subsidiary, Par Piceance Energy Equity, LLC. Please read Note 3—Investment in Laramie Energy, LLC to our consolidated financial statements under Item 8 of this Form 10-K for further information. Other than this guarantee, we have no material off-balance sheet arrangements as of December 31, 2019 that are reasonably likely to have a current or future material effect on our financial condition, results of operations, or cash flows.

Critical Accounting Policies and Estimates

The discussion and analysis of our financial condition and results of operations were based on the consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of these consolidated financial statements required us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues, and expenses. Our significant accounting policies are described in Note 2—Summary of Significant Accounting Policies to our audited consolidated financial statements under Item 8 of this Form 10-K. We have identified certain of these policies as being of particular importance to the portrayal of our financial position and results of operations and which require the application of significant judgment by management. We analyze our estimates on a periodic basis, including those related to fair value, impairments, natural gas and crude oil reserves, bad debts, natural gas and oil properties, income taxes, derivatives, contingencies, and litigation and base our estimates on historical experience and various other assumptions that we believe are reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions. We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements.

Inventory

Commodity inventories, excluding commodity inventories at the Washington refinery, are stated at the lower of cost or net realizable value using the first-in, first-out accounting method ("FIFO"). Commodity inventories at the Washington refinery are stated at the lower of cost or net realizable value using the last-in, first-out ("LIFO") inventory accounting method. We value merchandise along with spare parts, materials, and supplies at average cost. As of December 31, 2019, the excess of current replacement cost over LIFO inventory carrying value was approximately $6.4 million.

Estimating the net realizable value of our inventory requires management to make assumptions about the timing of sales and the expected proceeds that will be realized for the sales.

All of the crude oil utilized at the Hawaii refineries is financed by J. Aron under procurement contracts. The crude oil remains in the legal title of J. Aron and is stored in our storage tanks governed by a storage agreement. Legal title to the crude oil passes to us at the tank outlet. After processing, J. Aron takes title to the refined products stored in our storage tanks until they are sold to our retail locations or to third parties. We record the inventory owned by J. Aron on our behalf as inventory with a corresponding accrued liability on our balance sheet because we maintain the risk of loss until the refined products are sold to third parties and we have an obligation to repurchase it. The valuation of our repurchase obligation requires that we make estimates of the prices and differentials assuming settlement at the end of the reporting period. Please read Note 11—Inventory Financing Agreements to our consolidated financial statements under Item 8 of this Form 10-K for additional information.

In connection with the consummation of the Washington Acquisition, we became a party to the Washington Refinery Intermediation Agreement with MLC. Under this arrangement, U.S. Oil purchases crude oil supplied from third-party suppliers and MLC provides credit support for certain crude oil purchases. MLC's credit support can consist of either providing a payment guaranty, causing the issuance of a letter of credit from a third party issuing bank, or purchasing crude oil directly from third parties on our behalf. U.S. Oil holds title to all crude oil and refined products inventories at all times and pledges such inventories, together with all receivables arising from the sales of same, exclusively to MLC. The valuation of our terminal obligation requires that we make estimates of the prices and differentials for our then monthly forward purchase obligations. Please read Note 11—Inventory Financing Agreements to our consolidated financial statements under Item 8 of this Form 10-K for additional information.

Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. In estimating fair value, we use discounted cash flow projections, recent comparable market transactions, if available, or quoted prices. We consider assumptions that third parties would make in estimating fair value, including the highest and best use of the asset. The assumptions used by another party could differ significantly from our assumptions.

We classify fair value balances based on the classification of the inputs used to calculate the fair value of a transaction. The inputs used to measure fair value have been placed in a hierarchy based on priority. The hierarchy gives the highest priority to unadjusted, readily observable quoted prices in active markets for identical assets or liabilities (Level 1 measurement) and the lowest priority to unobservable inputs (Level 3 measurement). Please read Note 14—Fair Value Measurements to our consolidated financial statements under Item 8 of this Form 10-K for additional information.

We recognize assets acquired and liabilities assumed in business combinations at their estimated fair values as of the date of acquisition. Significant judgment is required in estimating the fair value of assets acquired. We obtain the assistance of third-party valuation specialists in estimating fair values of tangible and intangible assets based on available historical information and on expectations and assumptions about the future, considering the perspective of marketplace participants. These valuation methods require management to make estimates and assumptions regarding characteristics of the acquired property and future revenues and expenses. Changes in these estimates and assumptions would result in different amounts allocated to the related assets and liabilities.

Impairment of Goodwill and Long-lived Assets

We assess the recoverability of the carrying value of goodwill during the fourth quarter of each year or whenever events or changes in circumstances indicate that the carrying amount of the goodwill of a reporting unit may not be fully recoverable. We first assess qualitative factors to determine whether it is more likely than not that the fair value of the reporting unit is less than its carrying value. If the qualitative assessment indicates that it is more likely than not that the carrying value of a reporting unit exceeds its estimated fair value, a quantitative test is required. Under the quantitative test, we compare the carrying value of the net assets of the reporting unit to the estimated fair value of the reporting unit. If the carrying value exceeds the estimated fair value of the reporting unit, an impairment loss is recorded. The fair value of a reporting unit is determined using the income approach and the market approach. Under the income approach, we estimate the present value of expected future cash flows using a market participant discount rate. Under the market approach, we estimate fair value using observable multiples for comparable companies within our industry. These valuation methods require us to make significant estimates and assumptions regarding future cash flows, capital projects, commodity prices, long-term growth rates, and discount rates.

We review property, plant, and equipment, operating leases, and other long-lived assets whenever events or changes in business circumstances indicate the carrying value of the assets may not be recoverable. Impairment is indicated when the undiscounted cash flows estimated to be generated by those assets are less than the assets' carrying value. If this occurs, an impairment loss is recognized for the difference between the fair value and carrying value. The fair value of long-lived assets is determined using the income approach.

Impairment of our Investment in Laramie Energy

We evaluate our investment in Laramie Energy for impairment when factors indicate that a decrease in the value of our investment has occurred and the carrying amount of our investment may not be recoverable. The fair value of our investment in Laramie Energy is determined using the income approach and/or the market approach. Under the income approach, we estimate the present value of expected future cash flows using a market participant discount rate. Other significant inputs used in the income approach include proved and unproved reserves information and forecasts of operating expenditures obtained from Laramie Energy's management. Under the market approach, we estimate fair value using observable multiples for comparable companies within our industry. These valuation methods require us to make significant estimates and assumptions regarding future cash flows, capital projects, commodity prices, long-term growth rates, and discount rates. An impairment loss, based on the difference between the carrying value and the estimated fair value of the investment, is recognized in earnings when an impairment is deemed to be other than temporary.

Derivatives and Other Financial instruments

We are exposed to commodity price risk related to crude oil and refined products. We manage this exposure through the use of various derivative commodity instruments. These instruments include exchange traded futures and over-the-counter swaps, forwards, and options.

For our forward contracts that are derivatives, we have elected the normal purchase normal sale exclusion, as it is our policy to fulfill or accept the physical delivery of the product and we will not net settle. Therefore, we did not recognize the unrealized gains or losses related to these contracts in our consolidated financial statements. We apply the accrual method of accounting to contracts qualifying for the normal purchase and sale exemption.

All derivative instruments not designated as normal purchases or sales are recorded in the balance sheet as either assets or liabilities measured at their fair values. Changes in the fair value of these derivative instruments are recognized currently in earnings. We have not designated any derivative instruments as cash flow or fair value hedges and, therefore, do not apply hedge accounting treatment.

In addition, we may have other financial instruments, such as warrants or embedded debt features, that may be classified as liabilities when either (a) the holders possess rights to net cash settlement, (b) physical or net equity settlement is not in our control, or (c) the instruments contain other provisions that cause us to conclude that they are not indexed to our equity. We have accounted for our obligation to repurchase crude oil and refined products from J.Aron at the termination of the Supply and Offtake Agreements and to repay MLC for monthly crude oil and refined products' financing under the Washington Refinery Intermediation Agreement as embedded derivatives. Additionally, we have determined that the redemption option and the related make-whole premium on our 5.00% Convertible Senior Notes represent an embedded derivative. These liabilities were initially recorded at fair value and subsequently adjusted to fair value at the end of each reporting period through earnings.

Asset Retirement Obligations

We record asset retirement obligations ("AROs") at fair value in the period in which we have a legal obligation, whether by government action or contractual arrangement, to incur these costs and can make a reasonable estimate of the fair value of the liability. Our AROs arise from our refining, retail, and logistics operations. AROs are calculated based on the present value of the estimated removal and other closure costs using our credit-adjusted risk-free rate. When the liability is initially recorded, we capitalize the cost by increasing the book value of the related long-lived tangible asset. The liability is accreted to its estimated settlement value and the related capitalized cost is depreciated over the asset's useful life. Both expenses are recorded in Depreciation, depletion, and amortization in the consolidated statements of operations. The difference between the settlement amount and the recorded liability is recorded as a gain or loss on asset disposals in our consolidated statements of operations. We estimate settlement dates by considering our past practice, industry practice, management's intent, and estimated economic lives.

We cannot currently estimate the fair value for certain AROs primarily because we cannot estimate settlement dates (or ranges of dates) associated with these assets. These AROs include hazardous materials disposal (such as petroleum manufacturing by-products, chemical catalysts, and sealed insulation material containing asbestos) and removal or dismantlement requirements associated with the closure of our refining facilities, terminal facilities, or pipelines, including the demolition or removal of certain major processing units, buildings, tanks, pipelines, or other equipment.

Income Taxes

We use the asset and liability method of accounting for income taxes. Under the asset and liability method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and net operating loss ("NOL") and tax credit carry forwards. The realizability of deferred tax assets is evaluated quarterly based on a "more likely than not" standard and, to the extent this threshold is not met, a valuation allowance is recorded. In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible.

Based upon the level of historical taxable income and projections for future results of operations over the periods in which the deferred tax assets are deductible, among other factors, management concluded that we did not meet the "more likely than not" requirement in order to recognize deferred tax assets and therefore, a valuation allowance has been recorded for substantially all of our net deferred tax assets at December 31, 2019 and 2018.

Environmental Matters

We capitalize environmental expenditures that extend the life or increase the capacity of facilities as well as expenditures that prevent environmental contamination. We expense costs that relate to an existing condition caused by past operations and that do not contribute to current or future revenue generation. We record liabilities when environmental assessments and/or remedial efforts are probable and can be reasonably estimated. Cost estimates are based on the expected timing and extent of remedial actions required by governing agencies, experience gained from similar sites for which environmental assessments or remediation have been completed, and the amount of our anticipated liability considering the proportional liability and financial abilities of other responsible parties. Usually, the timing of these accruals coincides with the completion of a feasibility study or our commitment to a formal plan of action. Estimated liabilities are not discounted to present value and are presented within Other liabilities on our consolidated balance sheets. Environmental expenses are recorded in Operating expense (excluding depreciation) on our consolidated statements of operations.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Commodity Price Risk

Our earnings, cash flows, and liquidity are significantly affected by commodity price volatility. Our Revenues fluctuate with refined product prices and our Cost of revenues (excluding depreciation) fluctuates with movements in crude oil and feedstock prices. Assuming all other factors remain constant, a $1 per barrel change in average gross refining margins, based on our throughput of 164 Mbpd for the full year of 2019, would change annualized operating income by approximately $59.0 million. This analysis may differ from actual results.

In order to manage commodity price risks, we utilize exchange-traded futures, options, and over-the-counter ("OTC") swaps to manage commodity price risks associated with:

- the price for which we sell our refined products;
- the price we pay for crude oil and other feedstocks;
- our crude oil and refined products inventory; and
- our fuel requirements for our refineries.

All of our futures and OTC swaps are executed to economically hedge our physical commodity purchases, sales, and inventory. Our open futures expire at various dates through October 2020. At December 31, 2019, these open commodity derivative contracts represent (in thousands of barrels):

Contract type	Purchases	Sales	Net
Futures	3,360	(3,100)	260
Total	3,360	(3,100)	260

Based on our net open futures positions at December 31, 2019, a $1 change in the price of crude oil, assuming all other factors remain constant, would result in $0.3 million change to the fair value of our derivative instruments and Cost of revenues (excluding depreciation).

Our predominant variable operating cost is the cost of fuel consumed in the refining process, which is included in Cost of revenues (excluding depreciation) on our consolidated statements of operations. Assuming normal operating conditions, we consume approximately 164 thousand barrels per day of crude oil during the refining process at our Hawaii, Washington, and Wyoming refineries. We internally consume approximately 3% of this throughput in the refining process, which is accounted for as a fuel cost. We economically hedge 75 thousand barrels per month of our internally consumed fuel cost at our Hawaii refineries by executing option collars. These option collars have a weighted-average strike price ranging from a floor of $48.77 per barrel to a ceiling of $65.00 per barrel and expire in December 2020. We do not currently economically hedge our internally consumed fuel cost at our Wyoming or Washington refineries.

Compliance Program Price Risk

We are exposed to market risks related to the volatility in the price of RINs required to comply with the Renewable Fuel Standard. Our renewable volume obligation ("RVO") is based on a percentage of our Hawaii, Wyoming, and Washington refineries' production of on-road transportation fuel. The EPA sets the RVO percentages annually. To the degree we are unable to blend the required amount of biofuels to satisfy our RVO, we must purchase RINs on the open market. To mitigate the impact of this risk on our results of operations and cash flows, we may purchase RINs when the price of these instruments is deemed favorable. Some of these contracts are derivative instruments, however, we elect the normal purchases normal sales exception and do not record these contracts at their fair values.

Interest Rate Risk

As of December 31, 2019, we had $284.6 million of indebtedness that was subject to floating interest rates. We also had interest rate exposure in connection with our liability under the J. Aron Supply and Offtake Agreements and the MLC Washington Refinery Intermediation Agreement for which we pay charges based on three-month LIBOR. An increase of 1% in the variable rate on our indebtedness, after considering the instruments subject to minimum interest rates, would result in an increase to our Cost of revenues (excluding depreciation) and Interest expense and financing costs, net of approximately $3.5 million and $4.7 million per year, respectively.

We may utilize interest rate swaps to manage our interest rate risk. As of December 31, 2019, we had entered into an interest rate swap at an average fixed rate of 3.91% in exchange for the floating interest rate on the notional amounts due under the Retail Property Term Loan. This swap expires on April 1, 2024, the maturity date of the Retail Property Term Loan.

Credit Risk

We are subject to the risk of loss resulting from nonpayment or nonperformance by our counterparties. We will continue to closely monitor the creditworthiness of customers to whom we grant credit and establish credit limits in accordance with our credit policy.

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The consolidated financial statements and schedule required by this item are set forth beginning on page F-1.

Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURES

None.

Item 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Disclosure controls and procedures are designed with the objective of ensuring that all information required to be disclosed in our reports filed under the Securities Exchange Act of 1934, as amended ("Exchange Act"), such as this report, is recorded, processed, summarized, and reported within the time periods specified by the SEC. In connection with the preparation of this Annual Report on Form 10-K, as of December 31, 2019, an evaluation was performed under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act). Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that these disclosure controls and procedures were effective as of December 31, 2019.

Changes in Internal Control over Financial Reporting

There were no changes during the quarter ended December 31, 2019 in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934). The Company's internal control system was designed to provide reasonable assurance to the Company's management and Board of Directors regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

The Company's management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2019. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control—Integrated Framework (2013). Based on such assessment, the Company's management concluded that, as of December 31, 2019, the Company's internal control over financial reporting was effective based on those criteria.

Deloitte & Touche LLP, the Company's independent registered public accounting firm that audited the Company's financial statements included in this Annual Report on Form 10-K, has issued an audit report on the effectiveness of the Company's internal control over financial reporting as of December 31, 2019, which is included herein.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of
Par Pacific Holdings, Inc.
Houston, Texas

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Par Pacific Holdings, Inc. and subsidiaries (the "Company") as of December 31, 2019, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2019 of the Company and our report dated March 2, 2020 expressed an unqualified opinion on those financial statements and included an explanatory paragraph regarding the Company's adoption of a new accounting standard.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ DELOITTE & TOUCHE LLP

Houston, Texas
March 2, 2020

Item 9B. OTHER INFORMATION

None.

PART III

Item 10. DIRECTORS, EXECUTIVE OFFICERS, AND CORPORATE GOVERNANCE

The information required by this item is incorporated in this Annual Report on Form 10-K by reference to our definitive proxy statement or an amendment to this Annual Report on Form 10-K to be filed with the Securities and Exchange Commission not later than 120 days after the end of the fiscal year ended December 31, 2019.

Item 11. EXECUTIVE COMPENSATION

The information required by this item is incorporated in this Annual Report on Form 10-K by reference to our definitive proxy statement or an amendment to this Annual Report on Form 10-K to be filed with the Securities and Exchange Commission not later than 120 days after the end of the fiscal year ended December 31, 2019.

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this item is incorporated in this Annual Report on Form 10-K by reference to our definitive proxy statement or an amendment to this Annual Report on Form 10-K to be filed with the Securities and Exchange Commission not later than 120 days after the close of our fiscal year ended December 31, 2019.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

The information required by this item is incorporated in this Annual Report on Form 10-K by reference to our definitive proxy statement or an amendment to this Annual Report on Form 10-K to be filed with the Securities and Exchange Commission not later than 120 days after the end of the fiscal year ended December 31, 2019.

Item 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this item is incorporated in this Annual Report on Form 10-K by reference to our definitive proxy statement or an amendment to this Annual Report on Form 10-K to be filed with the Securities and Exchange Commission not later than 120 days after the end of the fiscal year ended December 31, 2019.

PART IV

Item 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this report:

(1) Consolidated Financial Statements (Included under Item 8). The Index to the Consolidated Financial Statements is included on page F-1 of this Annual Report on Form 10-K and is incorporated herein by reference.

(2) Financial Statement Schedules

Schedule I – Condensed Financial Information of Registrant

(b) Index to Exhibits

(1) In accordance with Regulation S-X Rule 3-09, we anticipate that the audited financial statements of Laramie Energy will be filed on or before March 30, 2020 as an amendment to this Form 10-K Filing.

2.1	Third Amended Joint Chapter 11 Plan of Reorganization of Delta Petroleum Corporation and Its Debtor Affiliates dated August 16, 2012. Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on September 7, 2012.**
2.2	Contribution Agreement, dated as of June 4, 2012, among Piceance Energy, LLC, Laramie Energy, LLC and the Company. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 8, 2012.**
2.3	Membership Interest Purchase Agreement dated as of June 17, 2013, by and among Tesoro Corporation, Tesoro Hawaii, LLC, and Hawaii Pacific Energy, LLC. Incorporated by reference to Exhibit 2.4 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2013, filed on August 14, 2013.**
2.4	Agreement and Plan of Merger dated as of June 2, 2014, by and among the Company, Bogey, Inc., Koko'oha Investments, Inc., and Bill D. Mills, in his capacity as the Shareholders' Representative. Incorporated by reference to Exhibit 2.5 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2014, filed on August 11, 2014.**
2.5	Amendment of Agreement and Plan of Merger dated as of September 9, 2014, by and among the Company, Bogey, Inc., Koko'oha Investments, Inc., and Bill D. Mills, in his capacity as the Shareholders' Representative. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on September 10, 2014.**
2.6	Second Amendment of Agreement and Plan of Merger dated as of December 31, 2014, by and among Par Petroleum Corporation, Bogey, Inc., Koko'oha Investments, Inc., and Bill D. Mills, in his capacity as the Shareholder's Representative. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on January 7, 2015.**
2.7	Third Amendment to Agreement and Plan of Merger dated as of March 31, 2015, by and among the Company, Bogey, Inc., Koko'oha Investments, Inc., and Bill D. Mills, in his capacity as the Shareholders' Representative. Incorporated by reference to Exhibit 2.4 to the Company's Current Report on Form 8-K filed on April 2, 2015.**
2.8	Unit Purchase Agreement, dated as of June 13, 2016, between Par Wyoming, LLC and Black Elk Refining, LLC. Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on June 15, 2016.**
2.9	First Amendment to Unit Purchase Agreement dated as of July 14, 2016, between Par Wyoming, LLC and Black Elk Refining, LLC. Incorporated by reference to Exhibit 2.2 to the Company's Current Report on Form 8-K filed on July 15, 2016.**
2.10	Purchase and Sale Agreement dated as of November 26, 2018, among Par Petroleum, LLC, TrailStone NA Oil & Refining Holdings, LLC, and solely for certain purposes specified therein, the Company. Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K/A filed on November 30, 2018.**#
2.11	Amendment No. 1 to Purchase and Sale Agreement dated as of January 11, 2019, among Par Petroleum, LLC, TrailStone NA Oil & Refining Holdings, LLC, and Par Pacific Holdings, Inc. Incorporated by reference to Exhibit 2.2 to the Company's Current Report on Form 8-K filed on January 14, 2019.
3.1	Restated Certificate of Incorporation of the Company dated October 20, 2015. Incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K filed on October 20, 2015.

3.2	Second Amended and Restated Bylaws of the Company dated October 20, 2015. Incorporated by reference to Exhibit 3.3 to the Company's Current Report on Form 8-K filed on October 20, 2015.
4.1	Form of the Company's Common Stock Certificate. Incorporated by reference to Exhibit 4.1 to the Company's Annual Report on Form 10-K filed on March 31, 2014.
4.2	Registration Rights Agreement effective as of August 31, 2012, by and among the Company, Zell Credit Opportunities Master Fund, L.P., Waterstone Capital Management, L.P., Pandora Select Partners, LP, Iam Mini-Fund 14 Limited, Whitebox Multi-Strategy Partners, LP, Whitebox Credit Arbitrage Partners, LP, HFR RVA Combined Master Trust, Whitebox Concentrated Convertible Arbitrage Partners, LP, and Whitebox Asymmetric Partners, LP. Incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K filed on September 7, 2012.
4.3	First Amendment to Registration Rights Agreement dated as of December 19, 2018, by and among the Company and the holders party thereto. Incorporated by reference to Exhibit 4.3 to the Company's registration statement on Form S-3 filed on December 21, 2018.
4.4	Warrant Issuance Agreement dated as of August 31, 2012, by and among the Company and WB Delta, Ltd., Waterstone Offshore ER Fund, Ltd., Prime Capital Master SPC, Waterstone Market Neutral MAC51, Ltd., Waterstone Market Neutral Master Fund, Ltd., Waterstone MF Fund, Ltd., Nomura Waterstone Market Neutral Fund, ZCOF Par Petroleum Holdings, L.L.C., and Highbridge International, LLC. Incorporated by reference to Exhibit 4.4 to the Company's Current Report on Form 8-K filed on September 7, 2012.
4.5	Form of Common Stock Purchase Warrant dated as of June 4, 2012. Incorporated by reference to Exhibit 4.5 to the Company's Current Report on Form 8-K filed on September 7, 2012.
4.6	Par Pacific Holdings, Inc. Amended and Restated 2012 Long Term Incentive Plan. Incorporated by reference to Appendix A to the Company's Proxy Statement on Schedule 14A filed on April 21, 2016.****
4.7	Par Pacific Holdings, Inc. Second Amended and Restated 2012 Long Term Incentive Plan. Incorporated by reference to Exhibit 4.1 to the Company's registration statement on Form S-8 filed on May 18, 2018.****
4.8	Par Pacific Holdings, Inc. 2018 Employee Stock Purchase Plan. Incorporated by reference to Exhibit 4.2 to the Company's Registration Statement on Form S-8 filed on May 18, 2018.****
4.9	Registration Rights Agreement dated as of September 25, 2013, by and among the Company and the Purchasers party thereto. Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on September 27, 2013.
4.10	Stockholders Agreement dated April 10, 2015. Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on April 13, 2015.
4.11	Registration Rights Agreement, dated June 21, 2016, between Par Pacific Holdings, Inc. and Merrill Lynch, Pierce, Fenner & Smith Incorporated, as representative of the Initial Purchasers. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 22, 2016.
4.12	Registration Rights Agreement dated as of July 14, 2016, by and among Par Pacific Holdings, Inc. and the purchasers party thereto. Incorporated by Reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on July 15, 2016.
4.13	First Amendment to Registration Rights Agreement dated as of September 27, 2016, by and among the Company and the purchasers party thereof. Incorporated by reference to Exhibit 4.14 to the Company's Quarterly Report on Form 10-Q filed on November 4, 2016.
4.14	Second Amendment to Registration Rights Agreement dated as of September 30, 2016, by and among the Company and the holders party thereto. Incorporated by reference to Exhibit 4.15 to the Company's Quarterly Report on Form 10-Q filed on November 4, 2016.
4.15	Third Amendment to Registration Rights Agreement dated as of October 7, 2016, by and among the Company and the holders party thereto. Incorporated by reference to Exhibit 4.16 to the Company's Quarterly Report on Form 10-Q filed on November 4, 2016.
4.16	Fourth Amendment to Registration Rights Agreement dated as of October 14, 2016, by and among the Company and the holders party thereto. Incorporated by reference to Exhibit 4.17 to the Company's Quarterly Report on Form 10-Q filed on November 4, 2016.
4.17	Fifth Amendment to Registration Rights Agreement dated as of October 21, 2016, by and among the Company and the holders party thereto. Incorporated by reference to Exhibit 4.18 to the Company's Quarterly Report on Form 10-Q filed on November 4, 2016.

4.18	Sixth Amendment to Registration Rights Agreement dated as of October 28, 2016 by and among the Company and the holders party thereto. Incorporated by reference to Exhibit 4.19 to the Company's Quarterly Report on Form 10-Q filed on November 4, 2016.
4.19	Indenture, dated June 21, 2016, between Par Pacific Holdings, Inc. and Wilmington Trust, National Association, as Trustee. Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on June 22, 2016.
4.20	Indenture, dated December 21, 2017, among Par Petroleum, LLC, Par Petroleum Finance Corp., the Guarantors (as defined therein), and Wilmington Trust, National Association, as Trustee and Collateral Trustee. Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on December 22, 2017.
4.21	First Supplemental Indenture, dated November 20, 2018, among Par Petroleum, LLC, Par Petroleum Finance Corp., the Guarantors (as defined therein), and Wilmington Trust, National Association, as Trustee. Incorporated by reference to Exhibit 4.21 to the Company's registration statement on Form S-3 filed on December 21, 2018.
4.22	Second Supplemental Indenture, dated January 11, 2019, among Par Tacoma, LLC (f/k/a TrailStone NA Asset Finance I, LLC), U.S. Oil & Refining Co., McChord Pipeline Co., Par Petroleum, LLC, Par Petroleum Finance Corp., Par Pacific Holdings, Inc., the other guarantors party thereto, and Wilmington Trust, National Association. Incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed on January 14, 2019.
4.23	Registration Rights Agreement dated as of December 19, 2018, by and between the Company and IES Downstream, LLC. Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on December 20, 2018.
4.24	Registration Rights Agreement dated as of January 11, 2019, by and between the Company and TrailStone NA Oil & Refining Holdings, LLC. Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on January 14, 2019.
4.25	Description of Registrant's Securities.*
10.1	Loan and Security Agreement dated as of December 21, 2017, among Par Petroleum, LLC, Par Hawaii, Inc, Mid Pac Petroleum, LLC, HIE Retail, LLC, Hermes Consolidated, LLC, Wyoming Pipeline Company, LLC, and the other members party thereto, the financial institutions party thereto, and Bank of America, N.A., as administrative agent. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 22, 2017.
10.2	Fourth Amended and Restated Limited Liability Company Agreement of Laramie Energy, LLC, dated as of October 18, 2018, by and among Par Piceance Energy Equity LLC and the other members party thereto. Incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed on November 7, 2018.
10.3	Credit Agreement dated as of June 4, 2012 among Piceance Energy, LLC, the financial institutions party thereto, JPMorgan Chase Bank, N.A., as administrative agent and Wells Fargo Bank, National Association, as syndication agent. Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on September 7, 2012.
10.4	First Amendment to Credit Agreement dated August 31, 2012, by and among Piceance Energy, LLC, the financial institutions party thereto and JPMorgan Chase Bank, N.A. Incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed on September 7, 2012.
10.5	Delta Petroleum General Recovery Trust Agreement dated August 27, 2012, by and among the Company, DPCA LLC, Delta Exploration Company, Inc., Delta Pipeline, LLC, DLC, Inc., CEC, Inc., Castle Texas Production Limited Partnership, Amber Resources Company of Colorado, Castle Exploration Company, Inc., and John T. Young. Incorporated by reference to Exhibit 10.6 to the Company's Current Report on Form 8-K filed on September 7, 2012.
10.6	Pledge Agreement dated August 31, 2012, by Par Piceance Energy Equity LLC in favor of Jefferies Finance LLC. Incorporated by reference to Exhibit 10.7 to the Company's Current Report on Form 8-K filed on September 7, 2012.
10.7	Intercreditor Agreement dated August 31, 2012, by and among JP Morgan Chase Bank, N.A., as administrative agent for the First Priority Secured Parties (as defined therein), Jefferies Finance LLC, as administrative agent for the Second Priority Secured Parties (as defined therein), the Company and Par Piceance Energy Equity LLC. Incorporated by reference to Exhibit 10.8 to the Company's Current Report on Form 8-K filed on September 7, 2012.
10.8	Pledge and Security Agreement, dated August 31, 2012, by the Company and certain of its subsidiaries in favor of Jefferies Finance LLC. Incorporated by reference to Exhibit 10.9 to the Company's Current Report on Form 8-K filed on September 7, 2012.

10.9	Form of Indemnification Agreement between the Company and its Directors and Executive Officers. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on October 19, 2012.****
10.10	Letter Agreement dated as of September 17, 2013 but effective as of January 1, 2013, by and between Equity Group Investments and the Company. Incorporated by reference to Exhibit 10.17 to the Company's Quarterly Report on Form 10-Q filed on November 14, 2013.
10.11	Environmental Agreement dated as of September 25, 2013, by and among Tesoro Corporation, Tesoro Hawaii, LLC, and Hawaii Pacific Energy, LLC. Incorporated by reference to Exhibit 10.16 to the Company's Quarterly Report on Form 10-Q filed on November 14, 2013.
10.12	Employment Offer Letter with William Monteleone dated September 25, 2013. Incorporated by reference to Exhibit 10.43 to the Company's Amendment No. 3 to Annual Report on Form 10-K/A filed on July 2, 2014.****
10.13	Employment Offer Letter with Joseph Israel dated December 12, 2014. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 17, 2014.****
10.14	Employment Offer Letter with James Matthew Vaughn dated July 3, 2014. Incorporated by reference to Exhibit 10.7 to the Company's Quarterly Report on Form 10-Q filed on May 5, 2016.****
10.15	Employment Offer Letter with Jim Yates dated March 10, 2015. Incorporated by reference to Exhibit 10.10 to the Company's Quarterly Report on Form 10-Q filed on May 5, 2016.****
10.16	Initial Award with Jim Yates dated May 8, 2015. Incorporated by reference to Exhibit 10.11 to the Company's Quarterly Report on Form 10-Q filed on May 5, 2016.****
10.17	Form of Award of Restricted Stock (Discretionary Long Term Incentive Plan).*
10.18	Form of Award of Restricted Stock Units (Discretionary Long Term Incentive Plan). Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on April 2, 2015.****
10.19	Form of Nonstatutory Stock Option Agreement (Discretionary Long Term Incentive Plan). Incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed on April 2, 2015.****
10.20	Par Petroleum (and subsidiaries) Incentive Compensation Plan. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 12, 2015.****
10.21	Amended and Restated Supply and Offtake Agreement dated as of December 21, 2017, between Par Hawaii Refining, LLC and J. Aron & Company, LLC. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on December 22, 2017.
10.22	Amendment to Amended and Restated Supply and Offtake Agreement dated as of December 5, 2018, between Par Hawaii Refining, LLC and J. Aron & Company, LLC. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 11, 2018.
10.23	Amendment to Amended and Restated Supply and Offtake Agreement dated as of February 19, 2019 by and among Par Hawaii Refining, LLC, Par Petroleum, LLC, and J. Aron & Company LLC. Incorporated by reference to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2018.
10.24	Amendment to Amended and Restated Supply and Offtake Agreement dated as of June 20, 2019, among Par Hawaii Refining, LLC f/k/a Hawaii Independent Energy, LLC, Par Petroleum, LLC, and J. Aron & Company LLC. Incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed on August 8, 2019.
10.25	Storage Facilities Agreement dated as of June 1, 2015, between Hawaii Independent Energy, LLC and J. Aron & Company. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed June 2, 2015.
10.26	Marketing and Sales Agreement dated as of June 1, 2015, between Hawaii Independent Energy, LLC and J. Aron & Company. Incorporated as Exhibit 10.3 to the Company's Current Report on Form 8-K filed June 2, 2015.
10.27	Amended and Restated Pledge and Security Agreement dated as of December 21, 2017, between Par Hawaii Refining, LLC and J. Aron & Company, LLC. Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on December 22, 2017.
10.28	Amendment to Amended and Restated Pledge and Security Agreement dated January 11, 2019, among Par Hawaii Refining, LLC and J. Aron & Company LLC. Incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K filed on January 14, 2019.

10.29	Environmental Indemnity Agreement dated as of June 1, 2015, by Hawaii Independent Energy, LLC in favor of J. Aron & Company. Incorporated by reference to Exhibit 10.7 to the Company's Current Report on Form 8-K filed June 2, 2015.
10.30	Employment Offer Letter with William C. Pate dated October 12, 2015. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed October 14, 2015.****
10.31	Amendment to Employment Offer Letter with Joseph Israel dated October 12, 2015. Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed October 14, 2015.****
10.32	Unit Purchase Agreement dated February 22, 2016, by and among Laramie Energy, LLC, Par Piceance Energy Equity LLC, and the other parties thereto. Incorporated by reference to Exhibit 10.74 to the Company's Annual Report on Form 10-K filed on March 3, 2016.**
10.33	Equity Commitment Letter dated December 17, 2015, by and between Par Pacific Holdings, Inc. and Piceance Energy, LLC. Incorporated by reference to Exhibit 10.75 to the Company's Annual Report on Form 10-K filed on March 3, 2016.**
10.34	Par Pacific Holdings, Inc. Non-Qualified Deferred Compensation Plan. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on March 6, 2017.****
10.35	Par Pacific Holdings, Inc. Severance Plan for Senior Officers. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on March 6, 2017. ****
10.36	First Amendment to Loan and Security Agreement dated as of April 3, 2018 by and among Par Petroleum, LLC, Par Hawaii, Inc., Mid Pac Petroleum, LLC, HIE Retail, LLC, Hermes Consolidated, LLC, Wyoming Pipeline Company, and Bank of America N.A. Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on May 10, 2018.
10.37	Asset Purchase Agreement dated as of January 9, 2018 by and among CHS Inc., Par Hawaii, Inc., and Par Pacific Holdings, Inc. Incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on May 10, 2018. #
10.38	First Amendment to Asset Purchase Agreement dated as of March 23, 2018 by and among CHS Inc., Par Hawaii, Inc., and Par Pacific Holdings, Inc. Incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed on May 10, 2018. #
10.39	Term Loan and Guaranty Agreement, dated as of January 11, 2019, among Par Petroleum, LLC, Par Petroleum Finance Corp., the guarantors party thereto, Par Pacific Holdings, Inc. solely for the limited purposes set forth therein, the lenders party thereto, and Goldman Sachs Bank USA, as administrative agent. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on January 14, 2019.
10.40	Collateral Trust and Intercreditor Agreement, dated as of December 21, 2017, among Par Petroleum, LLC, Par Petroleum Finance Corp., the guarantors from time to time party thereto, Wilmington Trust, National Association, as indenture trustee and as collateral trustee, J. Aron & Company LLC, and Goldman Sachs Bank USA. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on January 14, 2019.
10.41	Fourth Amendment to Loan and Security Agreement, dated as of January 11, 2019, among Par Petroleum, LLC, Par Hawaii, Inc., Mid Pac Petroleum, LLC, HIE Retail, LLC, Hermes Consolidated, LLC, Wyoming Pipeline Company LLC, the guarantors party thereto, the financial institutions party thereto, as lenders, and Bank of America, N.A., as administrative agent and collateral agent for the lenders. Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on January 14, 2019.
10.42	Conformed Copy of First Lien ISDA Master Agreement dated as of January 11, 2019, between Merrill Lynch Commodities, Inc. and U.S. Oil & Refining Co. Incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed on January 14, 2019.
10.43	Ninth Amendment to First Lien ISDA 2002 Master Agreement entered into as of November 1, 2019 by and between U.S. Oil & Refining Co. and Merrill Lynch Commodities, Inc. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on November 4, 2019.
10.44	Amendment to Amended and Restated Pledge and Security Agreement dated January 11, 2019, among Par Hawaii Refining, LLC and J. Aron & Company LLC. Incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K filed on January 14, 2019.
10.45	Loan Agreement, dated January 9, 2019, between Par Pacific Holdings, Inc. and Bank of Hawaii. Incorporated by reference to Exhibit 10.6 to the Company's Current Report on Form 8-K filed on January 14, 2019.
10.46	Note made by Par Pacific Holdings, Inc. to Bank of Hawaii, dated as of January 9, 2019. Incorporated by reference to Exhibit 10.7 to the Company's Current Report on Form 8-K filed on January 14, 2019.

10.47	Note made by Par Pacific Hawaii Property Company, LLC to Bank of Hawaii, dated as of March 29, 2019. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 3, 2019.
10.48	Increase Agreement dated July 24, 2018 among Par Petroleum, LLC, Par Hawaii, Inc., Mid Pac Petroleum, LLC, HIE Retail, LLC, Hermes Consolidated, LLC, Wyoming Pipeline Company, LLC, and certain lenders. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed July 27, 2018.
10.49	Topping Unit Purchase Agreement by and among IES Downstream, LLC, Eagle Island, LLC, Par Hawaii Refining, LLC, and Par Pacific Holdings, Inc., dated as of August 29, 2018. Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on November 7, 2018. #
10.50	Unit Purchase Agreement by and among Laramie Energy, LLC, EnCap Energy Capital Fund VI, L.P., and EnCap Energy VI-B Acquisitions, L.P., dated as of October 18, 2018. Incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on November 7, 2018. #
10.51	Second Amendment to Loan and Security Agreement dated as of October 16, 2018 by and among Par Petroleum, LLC, Par Hawaii, Inc., Mid Pac Petroleum, LLC, HIE Retail, LLC, Hermes Consolidated, LLC, Wyoming Pipeline Company, LLC, and the other members party thereto, the financial institutions party thereto, and Bank of America, N.A., as administrative agent. Incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed on November 7, 2018.
10.52	Term Loan Agreement dated as of March 29, 2019, between Par Pacific Hawaii Property Company, LLC and Bank of Hawaii. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 3, 2019.
10.53	Guaranty Agreement dated as of March 29, 2019 executed by Par Pacific Holdings, Inc. in favor of Bank of Hawaii. Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on April 3, 2019.
10.54	Form of Exchange Agreement. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 16, 2019.
14.1	Par Pacific Holdings, Inc. Code of Business Conduct and Ethics for Employees, Executive Officers and Directors, effective December 3, 2015. Incorporated by reference to Exhibit 14.1 to the Company's Annual Report on Form 10-K filed March 3, 2016.
21.1	Subsidiaries of the Registrant.*
23.1	Consent of Deloitte & Touche LLP*
23.2	Consent of Netherland, Sewell & Associates, Inc.*
31.1	Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.*
31.2	Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.*
32.1	Certification of Chief Executive Officer Pursuant to 18 U.S.C. Section 1350.*
32.2	Certification of Chief Financial Officer Pursuant to 18 U.S.C. Section 1350.*
99.1	Report of Netherland, Sewell & Associates, Inc. regarding the registrants Proved Reserves as of December 31, 2019.*
101.INS	XBRL Instance Document.***
101.SCH	XBRL Taxonomy Extension Schema Documents.***
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.***
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.***
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.***
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.***

*	Filed herewith.
**	Schedules and similar attachments have been omitted pursuant to Item 601(b)(2) of Regulation S-K. The Company will furnish supplementally a copy of any omitted schedule or similar attachment to the Securities and Exchange Commission upon request.

*** These interactive data files are furnished and deemed not filed or part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933, as amended, are deemed not filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended and otherwise are not subject to liability under those sections.

**** Management contract or compensatory plan or arrangement.

Confidential treatment has been granted for portions of this exhibit. Omissions are designated with brackets containing asterisks. As part of our confidential treatment request, a complete version of this exhibit has been filed separately with the SEC.

PAR PACIFIC HOLDINGS, INC. AND SUBSIDIARIES
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS
For the Years Ended December 31, 2019, 2018, and 2017

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of
Par Pacific Holdings, Inc.
Houston, Texas

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Par Pacific Holdings, Inc. and subsidiaries (the "Company") as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income, cash flows and changes in stockholders' equity for each of the three years in the period ended December 31, 2019, and the related notes and the schedule listed in the Index at Item 15 (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 2, 2020 expressed an unqualified opinion on the Company's internal control over financial reporting.

Emphasis of a Matter

As discussed in Note 2 to the financial statements, the Company has changed its method of accounting for right-of-use assets and lease liabilities in 2019 due to the adoption of Accounting Standards Update No. 2016-02, *Leases (Topic 842)*.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current-period audit of the financial statements that were communicated or required to be communicated to the audit committee and that (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Impairment – Investment in Laramie Energy, LLC — Refer to Note 3 to the financial statements.

Critical Audit Matter Description

The Company's investment in Laramie Energy, LLC is evaluated for impairment when events or changes in circumstances indicate that the carrying value of the Company's investment may not be recoverable. The Company's evaluation of the recoverability of its investment involves comparison of the estimated fair value based on discounted future cash flows expected to be generated by Laramie Energy, LLC to the carrying amount of its investment.

During 2019, the Company conducted an impairment evaluation of its investment in Laramie Energy, LLC because of the significant decline in natural gas prices over the year. As the carrying value of the Company's investment was determined not to be recoverable, the Company adjusted its investment to fair value based on the discounted future cash flows and recognized an impairment for the carrying amount in excess of fair value. The carrying amount of the Company's investment in Laramie Energy, LLC as of December 31, 2019 was $46.9 million, net of an $81.5 million impairment loss recorded during the year ended December 31, 2019.

The development of the Company's oil and natural gas reserve quantities and the related discounted future cash flows requires management to make significant estimates and assumptions related to future oil and natural gas prices and the discount rate applied to future cash flows. Laramie Energy, LLC engages an independent reserve engineer to estimate the oil and natural gas quantities using these estimates and assumptions and engineering data. Changes in these assumptions or engineering data could have a significant impact on the amount of impairment. Given the significant judgments made by management, performing audit procedures to evaluate the discounted future cash flows, including management's estimates and assumptions related to future oil and gas prices and the discount rate applied to future cash flows, required a high degree of auditor judgment and an increased extent of effort, including the need to involve our fair value specialists.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to management's significant judgments and assumptions utilized in the discounted future cash flow analysis included the following, among others:

- We tested the effectiveness of controls over the impairment evaluation, including management's controls over the determination of the fair value of Laramie Energy, LLC and reviewing the work of third-party specialists.
- With the assistance of our fair value specialists, we evaluated the reasonableness of the future oil and natural gas prices and the discount rate applied to future cash flows by:
  - Understanding the methodology used by management for development of the future oil and natural gas prices and comparing management's estimates to published forward pricing indices and third-party industry sources.
  - Understanding the methodology used by management for determination of the applicable discount rate and by comparing it against a discount rate range that was independently developed using publicly available market data for comparable entities.
  - Evaluating the experience, qualifications and objectivity of Laramie Energy LLC's expert, an independent reservoir engineering firm, including performing analytical procedures on the reserve quantities.

Acquisitions – U.S. Oil & Refining Co. — Refer to Note 4 to the financial statements.

Critical Audit Matter Description

The Company completed the acquisition of U.S. Oil & Refining Co. and certain affiliated entities (collectively "U.S. Oil") for a total purchase price of $326.5 million on January 11, 2019. The purchase price was allocated to the assets acquired and liabilities assumed based on their respective estimated fair values. The largest asset class acquired was plant, property and equipment, for which fair value was determined based on the cost approach for buildings, refining process units, tanks, vessels, terminals, pipelines and equipment, and the market approach for land.

We identified the acquisition of U.S. Oil as a critical audit matter because of the estimates management made to determine the fair value of certain assets acquired and liabilities assumed. This required a high degree of auditor judgment and an increased extent of effort, including the need to involve our valuation specialists when performing audit procedures to determine the fair value of acquired buildings, refining process units, tanks, vessels, terminals, pipelines and equipment under the cost approach, including estimating cost to acquire or construct comparable assets adjusted for the remaining useful lives, and land under the market approach.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the fair value of assets acquired and liabilities assumed for U.S. Oil included the following, among others:

- We tested the effectiveness of controls over the purchase price allocation, including management's controls over the assumptions used in the cost approach for buildings, refining process units, tanks, vessels, terminals, pipelines and equipment including estimating the cost to acquire or construct comparable assets adjusted for remaining useful lives; and the market approach for land and reviewing the work of third-party specialists.

- With the assistance of our fair value specialists:
  - We evaluated the reasonableness of selected valuation methodologies;
  - We tested the cost to acquire or construct comparable assets and the remaining useful lives used for the cost approach for buildings, refining process units, tanks, vessels, terminals, pipelines and equipment, including comparing such estimates to source information;
  - We tested the underlying source information used for the market approach for land.
- We considered any events or transactions occurring after the acquisition date that may indicate a different valuation for the assets acquired and liabilities assumed.

/s/ DELOITTE & TOUCHE LLP

Houston, Texas
March 2, 2020

We have served as the Company's auditor since 2013.

PAR PACIFIC HOLDINGS, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(in thousands, except share data)

	December 31, 2019	December 31, 2018
ASSETS		
Current assets		
Cash and cash equivalents	$ 126,015	$ 75,076
Restricted cash	2,413	743
Total cash, cash equivalents, and restricted cash	128,428	75,819
Trade accounts receivable	228,718	160,338
Inventories	615,872	322,065
Prepaid and other current assets	59,156	28,370
Total current assets	1,032,174	586,592
Property, plant, and equipment		
Property, plant, and equipment	1,146,983	649,768
Less accumulated depreciation, depletion, and amortization	(185,040)	(111,507)
Property, plant, and equipment, net	961,943	538,261
Long-term assets		
Operating lease assets	420,073	—
Investment in Laramie Energy, LLC	46,905	136,656
Intangible assets, net	21,549	23,947
Goodwill	195,919	153,397
Other long-term assets	21,997	21,881
Total assets	$ 2,700,560	$ 1,460,734
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Current maturities of long-term debt	$ 12,297	$ 33
Obligations under inventory financing agreements	656,162	373,882
Accounts payable	162,402	54,787
Deferred revenue	7,905	6,681
Accrued taxes	30,813	17,256
Operating lease liabilities	79,999	—
Other accrued liabilities	84,744	54,562
Total current liabilities	1,034,322	507,201
Long-term liabilities		
Long-term debt, net of current maturities	599,634	392,607
Common stock warrants	8,206	5,007
Finance lease liabilities	6,227	6,123
Operating lease liabilities	340,909	—
Other liabilities	63,020	37,467
Total liabilities	2,052,318	948,405
Commitments and Contingencies (Note 16)		
Stockholders' equity		
Preferred stock, $0.01 par value: 3,000,000 shares authorized, none issued	—	—
Common stock, $0.01 par value; 500,000,000 shares authorized at December 31, 2019 and December 31, 2018, 53,254,151 shares and 46,983,924 shares issued at December 31, 2019 and December 31, 2018, respectively	533	470
Additional paid-in capital	715,069	617,937
Accumulated deficit	(67,942)	(108,751)
Accumulated other comprehensive income	582	2,673
Total stockholders' equity	648,242	512,329
Total liabilities and stockholders' equity	$ 2,700,560	$ 1,460,734

See accompanying notes to consolidated financial statements.

PAR PACIFIC HOLDINGS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share amounts)

	Year Ended December 31,		
	2019	**2018**	**2017**
Revenues	$ 5,401,516	$ 3,410,728	$ 2,443,066
Operating expenses			
Cost of revenues (excluding depreciation)	4,803,589	3,003,116	2,054,627
Operating expense (excluding depreciation)	312,899	215,284	202,016
Depreciation, depletion, and amortization	86,121	52,642	45,989
General and administrative expense (excluding depreciation)	46,223	47,426	46,078
Acquisition and integration costs	4,704	10,319	395
Total operating expenses	5,253,536	3,328,787	2,349,105
Operating income	147,980	81,941	93,961
Other income (expense)			
Interest expense and financing costs, net	(74,839)	(39,768)	(31,632)
Debt extinguishment and commitment costs	(11,587)	(4,224)	(8,633)
Other income (expense), net	2,516	1,046	911
Change in value of common stock warrants	(3,199)	1,801	(1,674)
Change in value of contingent consideration	—	(10,500)	—
Equity earnings (losses) from Laramie Energy, LLC	(89,751)	9,464	18,369
Total other expense, net	(176,860)	(42,181)	(22,659)
Income (loss) before income taxes	(28,880)	39,760	71,302
Income tax benefit (expense)	69,689	(333)	1,319
Net Income	$ 40,809	$ 39,427	$ 72,621
Income per share			
Basic	$ 0.80	$ 0.85	$ 1.58
Diluted	$ 0.80	$ 0.85	$ 1.57
Weighted-average number of shares outstanding			
Basic	50,352	45,726	45,543
Diluted	50,470	45,755	45,583

See accompanying notes to consolidated financial statements.

PAR PACIFIC HOLDINGS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)

	Year Ended December 31,		
	2019	**2018**	**2017**
Net Income	$ 40,809	$ 39,427	$ 72,621
Other comprehensive income (loss):			
Other post-retirement benefits income (loss), net of tax	(2,091)	529	(52)
Total other comprehensive income (loss), net of tax	(2,091)	529	(52)
Comprehensive income	$ 38,718	$ 39,956	$ 72,569

See accompanying notes to consolidated financial statements.

PAR PACIFIC HOLDINGS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended December 31,		
	2019	**2018**	**2017**
Cash flows from operating activities:			
Net Income	$ 40,809	$ 39,427	$ 72,621
Adjustments to reconcile net income to cash provided by operating activities:			
Depreciation, depletion, and amortization	86,121	52,642	45,989
Debt extinguishment and commitment costs	11,587	4,224	8,633
Non-cash interest expense	9,118	7,127	7,276
Change in value of common stock warrants	3,199	(1,801)	1,674
Deferred taxes	(66,886)	661	(1,321)
Stock-based compensation	6,437	6,196	7,204
Unrealized (gain) loss on derivative contracts	9,350	2,122	(989)
Equity (earnings) losses from Laramie Energy, LLC	89,751	(9,464)	(18,369)
Net changes in operating assets and liabilities:			
Trade accounts receivable	(36,652)	(35,790)	(19,100)
Collateral posted with broker for derivative transactions	(8,797)	(3,790)	2,499
Prepaid and other assets	(24,121)	(5,521)	37,645
Inventories	(195,440)	31,840	(146,533)
Deferred turnaround expenditures	(9,800)	—	—
Obligations under inventory financing agreements	121,985	(17,138)	143,034
Accounts payable, other accrued liabilities, and operating lease assets and liabilities	68,969	19,885	(33,780)
Net cash provided by operating activities	105,630	90,620	106,483
Cash flows from investing activities:			
Acquisitions of businesses, net of cash acquired	(273,399)	(74,331)	—
Proceeds (expenditures) related to asset acquisition	3,226	(53,867)	—
Capital expenditures	(83,920)	(48,439)	(31,708)
Other investing activities	864	816	35
Net cash used in investing activities	(353,229)	(175,821)	(31,673)
Cash flows from financing activities:			
Proceeds from sale of common stock, net of offering costs	—	19,318	—
Proceeds from borrowings	510,906	118,741	616,706
Repayments of borrowings	(241,336)	(118,751)	(603,770)
Net borrowings (repayments) on deferred payment arrangements and receivable advances	43,422	27,264	(2,198)
Payment of deferred loan costs	(13,450)	(379)	(10,064)
Exercise of stock options	8,171	—	—
Payments for debt extinguishment and commitment costs	(8,087)	(3,390)	(4,432)
Other financing activities, net	582	(860)	(993)
Net cash provided by (used in) financing activities	300,208	41,943	(4,751)
Net increase (decrease) in cash, cash equivalents, and restricted cash	52,609	(43,258)	70,059
Cash, cash equivalents, and restricted cash at beginning of period	75,819	119,077	49,018
Cash, cash equivalents, and restricted cash at end of period	$ 128,428	$ 75,819	$ 119,077
Supplemental cash flow information:			
Net cash received (paid) for:			
Interest	$ (58,250)	$ (28,186)	$ (23,873)
Taxes	(136)	(49)	(1,478)
Non-cash investing and financing activities:			
Accrued capital expenditures	$ 6,386	$ 6,199	$ 2,926
ROU assets obtained in exchange for new finance lease liabilities	963	1,678	165
ROU assets obtained in exchange for new operating lease liabilities	79,382	—	—

Common stock issued for business combination	36,980	—	—
Common stock issued to repurchase convertible notes	74,290	—	—

See accompanying notes to consolidated financial statements.

PAR PACIFIC HOLDINGS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY
(in thousands)

	Common Stock		Additional Paid-In	Accumulated	Accumulated Other Comprehensive	Total
	Shares	Amount	Capital	Deficit	Income	Equity
Balance, January 1, 2017	45,534	$ 455	$ 587,057	$ (220,799)	$ 2,196	$ 368,909
Stock-based compensation	303	4	7,200	—	—	7,204
Purchase of common stock for retirement	(61)	(1)	(962)	—	—	(963)
Other comprehensive loss	—	—	—	—	(52)	(52)
Net income	—	—	—	72,621	—	72,621
Balance, December 31, 2017	45,776	458	593,295	(148,178)	2,144	447,719
Issuance of common stock in connection with acquisition	1,108	11	19,307	—	—	19,318
Stock-based compensation	147	1	6,195	—	—	6,196
Purchase of common stock for retirement	(47)	—	(860)	—	—	(860)
Other comprehensive income	—	—	—	—	529	529
Net income	—	—	—	39,427	—	39,427
Balance, December 31, 2018	46,984	470	617,937	(108,751)	2,673	512,329
Issuance of common stock in connection with acquisition	2,364	23	36,957	—	—	36,980
Issuance of common stock for convertible notes repurchase, net (1)	3,243	32	45,585	—	—	45,617
Issuance of common stock for employee stock purchase plan	68	1	1,489	—	—	1,490
Stock-based compensation	202	3	6,210	—	—	6,213
Purchase of common stock for retirement	(54)	—	(1,276)	—	—	(1,276)
Exercise of stock options	447	4	8,167	—	—	8,171
Other comprehensive loss	—	—	—	—	(2,091)	(2,091)
Net income	—	—	—	40,809	—	40,809
Balance, December 31, 2019	53,254	$ 533	$ 715,069	$ (67,942)	$ 582	$ 648,242

(1) The issuance of common stock for the repurchase of a portion of our 5.00% Convertible Senior Notes during the year ended December 31, 2019 is presented net of a $28.7 million write-off associated with the equity component of the repurchased notes.

See accompanying notes to consolidated financial statements.

Note 1—Overview

Par Pacific Holdings, Inc. and its wholly owned subsidiaries ("Par" or the "Company") own and operate market-leading energy and infrastructure businesses. Our strategy is to acquire and develop businesses in logistically-complex markets. Currently, we operate in three primary business segments:

1) **Refining** - We own and operate four refineries with total throughput capacity of over 200 thousand barrels per day ("Mbpd"). Our refineries in Kapolei, Hawaii produce ultra-low sulfur diesel ("ULSD"), gasoline, jet fuel, marine fuel, low sulfur fuel oil ("LSFO"), and other associated refined products primarily for consumption in Hawaii. Our refinery in Newcastle, Wyoming produces gasoline, ULSD, jet fuel, and other associated refined products that are primarily marketed in Wyoming and South Dakota. Our refinery in Tacoma, Washington produces distillates, gasoline, asphalt, and other associated refined products primarily marketed in the Pacific Northwest.

2) **Retail** - We operate 124 retail outlets in Hawaii, Washington, and Idaho. Our retail outlets in Hawaii sell gasoline, diesel, and retail merchandise throughout the islands of Oahu, Maui, Hawaii, and Kauai. Our Hawaii retail network includes Hele and "76" branded retail sites, company-operated convenience stores, 7-Eleven operated convenience stores, other sites operated by third parties, and unattended cardlock stations. In addition to the rebranding of 40 of our fueling stations in Hawaii to Hele as of December 31, 2019, we rebranded 28 of our 34 company-operated convenience stores in Hawaii to "nomnom," a new proprietary brand. Our retail outlets in Washington and Idaho sell gasoline, diesel, and retail merchandise and operate under the "Cenex®" and "Zip Trip®" brand names.

3) **Logistics** - We operate an extensive multi-modal logistics network spanning the Pacific, the Northwest, and the Rockies. We own and operate terminals, pipelines, a single-point mooring ("SPM"), and trucking operations to distribute refined products throughout the islands of Oahu, Maui, Hawaii, Molokai, and Kauai. We lease marine vessels for the movement of petroleum, refined products, and ethanol between the U.S. West Coast and Hawaii. We own and operate a crude oil pipeline gathering system, a refined products pipeline, storage facilities, and loading racks in Wyoming and a jet fuel storage facility and pipeline that serve Ellsworth Air Force Base in South Dakota. We own and operate logistics assets in Washington, including a marine terminal, a unit train-capable rail loading terminal, storage facilities, a truck rack, and a proprietary pipeline that serves McChord Air Force Base.

As of December 31, 2019, we owned a 46.0% equity investment in Laramie Energy, LLC ("Laramie Energy"), a joint venture entity operated by Laramie Energy II, LLC ("Laramie"). Laramie Energy is focused on producing natural gas in Garfield, Mesa, and Rio Blanco Counties, Colorado.

Our Corporate and Other reportable segment primarily includes general and administrative costs.

Note 2—Summary of Significant Accounting Policies

Principles of Consolidation and Basis of Presentation

The consolidated financial statements include the accounts of Par Pacific Holdings, Inc. and its subsidiaries. All intercompany balances and transactions have been eliminated in consolidation.

Certain amounts previously reported in our consolidated financial statements for prior periods have been reclassified to conform to the current presentation.

Use of Estimates

The preparation of our consolidated financial statements in conformity with U.S. generally accepted accounting principles ("GAAP") requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, and expenses and the related disclosures. Actual amounts could differ from these estimates.

Cash and Cash Equivalents

Cash and cash equivalents consist of all highly liquid investments with original maturities of three months or less. The carrying value of cash equivalents approximates fair value because of the short-term nature of these investments.

Restricted Cash

Restricted cash consists of cash not readily available for general purpose cash needs. Restricted cash relates to cash held at commercial banks to support letter of credit facilities and certain ongoing bankruptcy recovery trust claims.

Allowance for Doubtful Accounts

We establish provisions for losses on trade receivables if it becomes probable that we will not collect all or part of the outstanding balances. We review collectibility and establish or adjust our allowance as necessary using the specific identification method. As of December 31, 2019 and 2018, we did not have a significant allowance for doubtful accounts.

Inventories

Commodity inventories, excluding commodity inventories at the Washington refinery, are stated at the lower of cost or net realizable value using the first-in, first-out ("FIFO") inventory accounting method. Commodity inventories at the Washington refinery are stated at the lower of cost or net realizable value using the last-in, first-out ("LIFO") inventory accounting method. We value merchandise along with spare parts, materials, and supplies at average cost. As of December 31, 2019, the excess of current replacement cost over LIFO inventory carrying value at the Washington refinery was approximately $6.4 million.

All of the crude oil utilized at the Hawaii refineries is financed by J. Aron & Company LLC ("J. Aron") under the Supply and Offtake Agreements as described in Note 11—Inventory Financing Agreements. The crude oil remains in the legal title of J. Aron and is stored in our storage tanks governed by a storage agreement. Legal title to the crude oil passes to us at the tank outlet. After processing, J. Aron takes title to the refined products stored in our storage tanks until they are sold to our retail locations or to third parties. We record the inventory owned by J. Aron on our behalf as inventory with a corresponding obligation on our balance sheet because we maintain the risk of loss until the refined products are sold to third parties and we are obligated to repurchase the inventory.

In connection with the consummation of the Washington Acquisition (as defined in Note 4—Acquisitions), we became a party to an intermediation arrangement (the "Washington Refinery Intermediation Agreement") with Merrill Lynch Commodities, Inc. (" MLC") as described in Note 11—Inventory Financing Agreements. Under this arrangement, U.S. Oil (as defined in Note 4—Acquisitions) purchases crude oil supplied from third-party suppliers and MLC provides credit support for certain crude oil purchases. MLC's credit support can consist of either providing a payment guaranty, causing the issuance of a letter of credit from a third party issuing bank, or purchasing crude oil directly from third parties on our behalf. U.S. Oil holds title to all crude oil and refined products inventories at all times and pledges such inventories, together with all receivables arising from the sales of same, exclusively to MLC.

We enter into refined product and crude oil exchange agreements with other oil companies. Exchange receivables or payables are stated at cost and are presented within Trade accounts receivable and Accounts payable on our consolidated balance sheets.

Renewable Identification Numbers

Beginning in 2018, Inventories also include Renewable Identification Numbers ("RINs"), sulfur credits, and other environmental credits. Our RINs assets, which include RINs purchased in the open market and RINs obtained by purchasing biofuels, which are blended into our refined products, are presented as Inventories on our consolidated balance sheets and stated at the lower of cost or net realizable value ("NRV") as of the end of the reporting period. Our RINs obligations to comply with the Renewable Fuel Standard ("RFS") (discussed in Note 16—Commitments and Contingencies) are presented as Other accrued liabilities on our consolidated balance sheets and measured at fair value as of the end of the reporting period. Our sulfur credits and other environmental credits generated as part of our refining process are presented as Inventories on our consolidated balance sheets and stated at the lower of cost or NRV as of the end of the reporting period. The net cost of environmental credits is recognized within Cost of revenues (excluding depreciation) in our consolidated statements of operations.

Investment in Laramie Energy, LLC

We account for our Investment in Laramie Energy, LLC using the equity method as we have the ability to exert significant influence, but do not control its operating and financial policies. Our proportionate share of net income (loss) of this entity is included in Equity earnings (losses) from Laramie Energy, LLC in the consolidated statements of operations. The investment is reviewed for impairment when events or changes in circumstances indicate that there may have been an other-than-temporary decline in the value of the investment. During the year ended December 31, 2019, we recorded an impairment charge of $81.5 million on our consolidated statement of operations due to the significant decline in natural gas prices during the second and third quarters of 2019. Please read Note 3—Investment in Laramie Energy, LLC for further information.

Property, Plant, and Equipment

We capitalize the cost of additions, major improvements, and modifications to property, plant, and equipment. The cost of repairs and normal maintenance of property, plant, and equipment is expensed as incurred. Major improvements and modifications of property, plant, and equipment are those expenditures that either extend the useful life, increase the capacity, or improve the operating efficiency of the asset or the safety of our operations. We compute depreciation of property, plant, and equipment using the straight-line method, based on the estimated useful life of each asset as follows:

Assets	Lives in Years
Refining	5 to 47
Logistics	3 to 30
Retail	3 to 30
Corporate	3 to 7
Software	3 to 5

We review property, plant, and equipment, operating leases, and other long-lived assets for impairment whenever events or changes in business circumstances indicate the carrying value of the assets may not be recoverable. Impairment is indicated when the undiscounted cash flows estimated to be generated by those assets are less than the assets' carrying value. If this occurs, an impairment loss is recognized for the difference between the fair value and carrying value. Factors that indicate potential impairment include a significant decrease in the market value of the asset, operating or cash flow losses associated with the use of the asset, and a significant change in the asset's physical condition or use.

Lease Assets and Liabilities

On January 1, 2019, we adopted Accounting Standards Update ("ASU") No. 2016-02, *Leases (Topic 842)*, as amended by other ASUs issued through February 2019 ("ASU 2016-02" or "ASC 842"), using the modified retrospective transition method. Under this optional transition method, information presented prior to January 1, 2019 has not been restated and continues to be reported under the accounting standards in effect for the period. There was no adjustment to our opening retained earnings as a result of the adoption of this ASU.

We determine whether a contract is or contains a lease when we have the right to control the use of the identified asset in exchange for consideration. Lease liabilities and right-of-use assets ("ROU assets") are recognized at the commencement date based on the present value of lease payments over the lease term. We use our incremental borrowing rate in the calculation of present value unless the implicit rate can be readily determined, however, the lease liability associated with leases calculated through the use of implicit rates is not significant. Certain leases include provisions for variable payments based upon percentage of sales and/or other operating metrics; escalation provisions to adjust rental payments to reflect changes in price indices and fair market rents; and provisions for the renewal, termination, and/or purchase of the leased asset. We only consider fixed payments and those options that are reasonably certain to be exercised in the determination of the lease term and the initial measurement of lease liabilities and ROU assets. Expense for finance leases is recognized as amortization expense on a straight-line basis and interest expense on an effective rate basis over the lease term. Expense for operating lease payments is recognized as lease expense on a straight-line basis over the lease term. We do not separate lease and nonlease components of a contract. Leases with an initial term of 12 months or less are not recorded on the balance sheet. Finance lease ROU assets are presented within Property, plant, and equipment and Operating lease ROU assets within Operating lease assets on our consolidated balance sheets. Please read Note 15—Leases for further disclosures and information on leases.

Asset Retirement Obligations

We record asset retirement obligations ("AROs") in the period in which we have a legal obligation, whether by government action or contractual arrangement, to incur these costs and can make a reasonable estimate of the liability. Our AROs arise from our refining, logistics, and retail operations. AROs are calculated based on the present value of the estimated removal and other closure costs using our credit-adjusted risk-free rate. When the liability is initially recorded, we capitalize the cost by increasing the book value of the related long-lived tangible asset. The liability is accreted to its estimated settlement value with accretion expense recognized in Depreciation, depletion, and amortization ("DD&A") on our consolidated statements of operations and the related capitalized cost is depreciated over the asset's useful life. The difference between the settlement amount and the recorded liability is recorded as a gain or loss on asset disposals in our consolidated statements of operations. We estimate settlement dates by considering our past practice, industry practice, contractual terms, management's intent, and estimated economic lives.

We cannot currently estimate the fair value for certain AROs primarily because we cannot estimate settlement dates (or range of dates) associated with these assets. These AROs include hazardous materials disposal (such as petroleum manufacturing by-products, chemical catalysts, and sealed insulation material containing asbestos) and removal or dismantlement requirements associated with the closure of our refining facilities, terminal facilities, or pipelines, including the demolition or removal of certain major processing units, buildings, tanks, pipelines, or other equipment.

Deferred Turnaround Costs

Refinery turnaround costs, which are incurred in connection with planned major maintenance activities at our refineries, are deferred and amortized on a straight-line basis over the period of time estimated until the next planned turnaround (generally three to five years). During 2019, we recognized deferred turnaround costs of approximately $9.8 million. No deferred turnaround costs were recorded during 2018 and 2017. Deferred turnaround costs are presented within Other long-term assets on our consolidated balance sheets.

Goodwill and Other Intangible Assets

Goodwill represents the amount the purchase price exceeds the fair value of net assets acquired in a business combination. Goodwill is not amortized, but is tested for impairment annually on October 1. We assess the recoverability of the carrying value of goodwill during the fourth quarter of each year or whenever events or changes in circumstances indicate that the carrying amount of the goodwill of a reporting unit may not be fully recoverable. We first assess qualitative factors to determine whether it is more likely than not that the fair value of the reporting unit is less than its carrying value. If the qualitative assessment indicates that it is more likely than not that the carrying value of a reporting unit exceeds its estimated fair value, a quantitative test is required. Under the quantitative test, we compare the carrying value of the net assets of the reporting unit to the estimated fair value of the reporting unit. If the carrying value exceeds the estimated fair value of the reporting unit, an impairment loss is recorded.

Our intangible assets include relationships with customers, trade names, and trademarks. These intangible assets are amortized over their estimated useful lives on a straight-line basis. We evaluate the carrying value of our intangible assets when impairment indicators are present. When we believe impairment indicators may exist, projections of the undiscounted future cash flows associated with the use of and eventual disposition of the intangible assets are prepared. If the projections indicate that their carrying values are not recoverable, we reduce the carrying values to their estimated fair values.

Environmental Matters

We capitalize environmental expenditures that extend the life or increase the capacity of facilities as well as expenditures that prevent environmental contamination. We expense costs that relate to an existing condition caused by past operations and that do not contribute to current or future revenue generation. We record liabilities when environmental assessments and/or remedial efforts are probable and can be reasonably estimated. Cost estimates are based on the expected timing and extent of remedial actions required by governing agencies, experience gained from similar sites for which environmental assessments or remediation have been completed, and the amount of our anticipated liability considering the proportional liability and financial abilities of other responsible parties. Usually, the timing of these accruals coincides with the completion of a feasibility study or our commitment to a formal plan of action. Estimated liabilities are not discounted to present value and are presented within Other liabilities on our consolidated balance sheets. Environmental expenses are recorded in Operating expense (excluding depreciation) on our consolidated statements of operations.

Derivatives and Other Financial instruments

We are exposed to commodity price risk related to crude oil and refined products. We manage this exposure through the use of various derivative commodity instruments. These instruments include exchange traded futures and over-the-counter (“OTC”) swaps, forwards, and options.

For our forward contracts that are derivatives, we have elected the normal purchase normal sale exclusion, as it is our policy to fulfill or accept the physical delivery of the product and we will not net settle. Therefore, we did not recognize the unrealized gains or losses related to these contracts in our consolidated financial statements. We apply the accrual method of accounting to our forward contracts.

All derivative instruments not designated as normal purchases or sales are recorded in the balance sheet as either assets or liabilities measured at their fair values. Changes in the fair value of these derivative instruments are recognized currently in earnings. We have not designated any derivative instruments as cash flow or fair value hedges and, therefore, do not apply hedge accounting treatment.

In addition, we may have other financial instruments, such as warrants or embedded debt features, that may be classified as liabilities when either (a) the holders possess rights to net cash settlement, (b) physical or net equity settlement is not in our control, or (c) the instruments contain other provisions that cause us to conclude that they are not indexed to our equity. Our embedded derivatives include: our obligations to repurchase crude oil and refined products from J. Aron at the termination of the Supply and Offtake Agreements and to repay MLC for monthly crude oil and refined product financing under the Washington Refinery Intermediation Agreement and the redemption option and the related make-whole premium on our 5.00% Convertible Senior Notes. These liabilities were initially recorded at fair value and subsequently adjusted to fair value at the end of each reporting period through earnings.

Please read Note 13—Derivatives and Note 14—Fair Value Measurements for information regarding our derivatives and other financial instruments.

Income Taxes

We use the asset and liability method of accounting for income taxes. Under the asset and liability method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and net operating loss ("NOL") and tax credit carry forwards. Deferred tax assets and liabilities are measured using enacted income tax rates expected to apply to taxable income in the years in which those differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in income tax rates is recognized in the results of operations in the period that includes the enactment date. The realizability of deferred tax assets is evaluated quarterly based on a "more likely than not" standard and, to the extent this threshold is not met, a valuation allowance is recorded.

We have determined that any uncertain tax positions outstanding at December 31, 2019 and 2018 would not have a material impact on our financial condition, results of operations, or cash flows as any uncertain tax positions taken would have been fully covered by the Company's deferred tax assets related to its historical net operating losses and corresponding valuation allowance.

As a general rule, our open years for Internal Revenue Service ("IRS") examination purposes are 2016, 2017, and 2018. However, since we have NOL carryforwards, the IRS has the ability to make adjustments to items that originate in a year otherwise barred by the statute of limitations in order to re-determine tax for an open year to which those items are carried. Therefore, in a year in which a NOL deduction is claimed, the IRS may examine the year in which the NOL was generated and adjust it accordingly for purposes of assessing additional tax in the year the net operating loss deduction was claimed. Any penalties or interest as a result of an examination will be recorded in the period assessed.

Stock-Based Compensation

We recognize the cost of share-based payments on a straight-line basis over the period the employee provides service, generally the vesting period, and include such costs in General and administrative expense (excluding depreciation) and Operating expense (excluding depreciation) in the consolidated statements of operations. We account for forfeitures as they occur. The grant date fair value of restricted stock awards is equal to the market price of our common stock on the date of grant. The fair value of stock options is estimated using the Black-Scholes option-pricing model as of the date of grant. The fair value of the discount offered on the employee stock purchase plan is equal to 15% of the market price of our common stock on the purchase date.

Revenue Recognition

On January 1, 2018, we adopted ASU No. 2014-09, *Revenue from Contracts with Customers (Topic 606)* ("ASU 2014-09" or "ASC 606"), as amended by other ASUs, using the modified retrospective method applied to all contracts that were not completed as of January 1, 2018. As such, the comparative financial information for prior periods has not been adjusted and continues to be reported under Financial Accounting Standards Board ("FASB") ASC Topic 605, *Revenue Recognition* ("ASC 605"). We did not identify any significant differences in our existing revenue recognition policies that require modification under the new standard; therefore, we did not recognize a cumulative adjustment on opening equity as of January 1, 2018.

Refining and Retail

Our refining and retail segment revenues are primarily associated with the sale of refined products. We recognize revenues upon physical delivery of refined products to a customer, which is the point in time at which control of the refined products is transferred to the customer. The refining segment's contracts with its customers state the terms of the sale, including the description, quantity, delivery terms, and price of each product sold. Payments from customers are generally due in full within 2 to 30 days of product delivery or invoice date.

We account for certain transactions on a net basis under FASB ASC Topic 845, "Nonmonetary Transactions." These transactions include nonmonetary crude oil and refined product exchange transactions, certain crude oil buy/sell arrangements, and sale and purchase transactions entered into with the same counterparty that are deemed to be in contemplation with one another.

Upon adoption of ASC 606, we made an accounting policy election to apply the sales tax practical expedient, whereby all taxes assessed by a governmental authority that are both imposed on and concurrent with a revenue-producing transaction and collected from our customers will be recognized on a net basis within Cost of revenues (excluding depreciation). This change in our accounting policy did not have a material impact on our consolidated financial information for the years ended December 31, 2019 and 2018.

Logistics

We recognize transportation and storage fees as services are provided to a customer. Substantially all of our logistics revenues represent intercompany transactions that are eliminated in consolidation.

Cost Classifications

Cost of revenues (excluding depreciation) includes the hydrocarbon-related costs of inventory sold, transportation costs of delivering product to customers, crude oil consumed in the refining process, costs to satisfy our RINs obligations, and certain hydrocarbon fees and taxes. Cost of revenues (excluding depreciation) also includes the unrealized gains (losses) on derivatives and inventory valuation adjustments. Certain direct operating expenses related to our logistics segment are also included in Cost of revenues (excluding depreciation).

Operating expense (excluding depreciation) includes direct costs of labor, maintenance and services, energy and utility costs, property taxes, and environmental compliance costs, as well as chemicals and catalysts and other direct operating expenses.

The following table summarizes depreciation and finance lease amortization expense excluded from each line item in our consolidated statements of operations (in thousands):

	Year Ended December 31,		
	2019	**2018**	**2017**
Cost of revenues	$ 16,882	$ 6,722	$ 6,029
Operating expense	55,181	28,037	22,861
General and administrative expense	3,145	4,233	2,929

Benefit Plans

We recognize an asset for the overfunded status or a liability for the underfunded status of our defined benefit pension plans. The funded status is recorded within Other long-term liabilities. Certain changes in the plans' funded status are recognized in Other comprehensive income (loss) in the period the change occurs.

Fair Value Measurements

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (exit price). Fair value measurements are categorized with the highest priority given to unadjusted quoted prices in active markets for identical assets or liabilities and the lowest priority given to unobservable inputs. The three levels of the fair value hierarchy are as follows:

Level 1 – Assets or liabilities for which the item is valued based on quoted prices (unadjusted) for identical assets or liabilities in active markets.
Level 2 – Assets or liabilities valued based on observable market data for similar instruments.
Level 3 – Assets or liabilities for which significant valuation assumptions are not readily observable in the market; instruments valued based on the best available data, some of which is internally-developed and considers risk premiums that a market participant would require.

The level in the fair value hierarchy within which the fair value measurement is categorized is based on the lowest level input that is significant to the fair value measurement. Our assessment of the significance of a particular input to the fair value measurement requires judgment and may affect the valuation of the fair value of assets and liabilities and their placement within the fair value hierarchy levels. Our policy is to recognize transfers in and/or out of fair value hierarchy levels as of the end of the reporting period for which the event or change in circumstances caused the transfer. We have consistently applied these valuation techniques for the periods presented. The fair value of the J. Aron repurchase obligation derivative is measured using estimates of the prices and differentials assuming settlement at the end of the reporting period.

Income (Loss) Per Share

Basic income (loss) per share ("EPS") is computed by dividing net income (loss) attributable to common stockholders by the sum of the weighted-average number of common shares outstanding and the weighted-average number of shares issuable under the warrants. The common stock warrants are included in the calculation of basic EPS because they are issuable for minimal consideration. Basic and diluted EPS are computed taking into account the effect of participating securities. Participating securities include restricted stock that has been issued but has not yet vested. Please read Note 19—Income (Loss) Per Share for further information.

Foreign Currency Transactions

We may, on occasion, enter into transactions denominated in currencies other than the U.S. dollar, which is our functional currency. Gains and losses resulting from changes in currency exchange rates between the functional currency and the currency in which a transaction is denominated are included in Other income (expense), net, in the accompanying consolidated statement of operations in the period in which the currency exchange rates change.

Accounting Principles Not Yet Adopted

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"). This ASU requires expected credit losses on financial instruments to be recorded over the estimated life of the financial instrument. Prior to this ASU, the guidance required recording of credit losses when those losses were incurred. ASU 2016-13 is applicable to credit losses and allowances on loans, debt securities, trade receivables, net investments in leases, off-balance-sheet credit exposures, reinsurance receivables, and certain other financial assets, but excludes derivative assets under FASB ASC Topic 815 "Derivatives and Hedging." The guidance in this ASU is effective for fiscal years and interim periods beginning after December 15, 2019, with early adoption permitted, and primarily requires adoption on the modified retrospective transition method. On January 1, 2020, we adopted this ASU and our adoption did not have a material impact on our financial condition, results of operations, cash flows, or related disclosures.

In January 2017, the FASB issued ASU No. 2017-04, *Intangibles—Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment* ("ASU 2017-04"), which eliminates Step 2 from the current goodwill impairment test. Under ASU 2017-04, an entity is no longer required to determine goodwill impairment by calculating the implied fair value of goodwill by assigning the fair value of a reporting unit to all of its assets and liabilities as if that reporting unit had been acquired in a business combination. Under ASU 2017-04, an entity should recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value. The guidance in this ASU is effective for fiscal years and interim periods beginning after December 15, 2019, with early adoption permitted. This ASU should be applied prospectively from the date of adoption. This ASU will change the policy under which we perform our annual goodwill impairment assessment by eliminating Step 2 of the test.

In August 2018, the FASB issued ASU No. 2018-13, *Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement* ("ASU 2018-13"). This ASU amends, adds, and removes certain disclosure requirements under FASB ASC Topic 820 "Fair Value Measurement." The guidance in ASU 2018-13 is effective for fiscal years and interim periods beginning after December 15, 2019, with early adoption permitted. This ASU will result in expanded disclosures within our interim and annual footnote disclosures, however, we do not expect the adoption of ASU 2018-13 to have a material impact on our financial condition, results of operations, or cash flows.

In August 2018, the FASB issued ASU No. 2018-14, *Disclosure Framework—Changes to the Disclosure Requirements for Defined Benefit Plans* ("ASU 2018-14"). This ASU amends, adds, and removes certain disclosure requirements under FASB ASC Topic 715 "Compensation—Retirement Benefits." The guidance in ASU 2018-14 is effective for fiscal years beginning after December 15, 2020, with early adoption permitted. This ASU will result in expanded disclosures within our interim and annual footnote disclosures, however, we do not expect the adoption of ASU 2018-14 to have a material impact on our financial condition, results of operations, or cash flows.

In August 2018, the FASB issued ASU No. 2018-15, *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That is a Service Contract* ("ASU 2018-15"). This ASU requires entities to account for implementation costs incurred in a cloud computing agreement that is a service contract under the guidance in FASB ASC Topic 350, "Goodwill and Intangible Assets," which results in a capitalized and amortizable intangible asset. The guidance in ASU 2018-15 is effective for fiscal years and interim periods beginning after December 15, 2019, with early adoption permitted. On January 1, 2020, we adopted ASU 2018-15 under the prospective method and information that was presented prior to January 1, 2020 has not been restated and continues to be reported under the accounting standards in effect for that period. The adoption of ASU 2018-15 did not have a material impact on our financial condition, results of operations, or cash flows.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* (“ASU 2019-12”). The objective of ASU 2019-12 is to simplify the accounting for income taxes by removing certain exceptions to general principles and to clarify and amend guidance to improve consistency under FASB ASC 740 “Income Taxes.” The guidance in ASU 2019-12 is effective for fiscal years beginning after December 15, 2020, with early adoption permitted. We are in the process of determining the method(s) of adoption and the impact this guidance will have on our financial condition, results of operations, and cash flows.

Accounting Principles Adopted

On January 1, 2019, we adopted ASU No. 2016-02, *Leases (Topic 842)*, as amended by other ASUs issued through February 2019 (“ASU 2016-02” or “ASC 842”), using the modified retrospective transition method. Under this optional transition method, information presented prior to January 1, 2019 has not been restated and continues to be reported under the accounting standards in effect for the period. There was no adjustment to our opening retained earnings as a result of the adoption of this ASU.

ASU 2016-02 required lessees to recognize a ROU asset and lease liability on the balance sheet for all rights and obligations created by leases. The new standard provided a number of optional practical expedients. We have elected:

- the package of practical expedients, permitting us to carry forward our conclusions regarding lease identification, classification, and initial direct costs for contracts that commenced prior to the effective date;
- the practical expedient pertaining to land easements, allowing us to account for existing land easements under our previous accounting policy;
- the short-term lease exemption, which states that leases that are 12 months or less are exempt from balance sheet reporting; and
- the practical expedient that allows us to combine lease and non-lease components.

ASC 842 had a material impact on our consolidated balance sheet; however, it did not materially impact our consolidated statement of operations or statement of cash flows. As a result of the adoption of ASC 842, we recorded ROU assets and lease liabilities related to operating leases of $347 million and $349 million, respectively. Our accounting for finance leases remained substantially unchanged. Additionally, we acquired operating lease assets and lease liabilities of $62 million in connection with the Washington Acquisition (as defined in Note 4—Acquisitions). Please read Note 15—Leases for further disclosures and information.

On January 1, 2019, we adopted ASU No. 2018-02, *Income Statement—Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income* (“ASU 2018-02”) and elected not to reclassify to retained earnings the stranded effects in Accumulated Other Comprehensive Income related to the changes in the statutory tax rate that were charged to income from continuing operations under the requirements of FASB ASC Topic 740, “Income Taxes.” The adoption of ASU 2018-02 did not have a material impact on our financial condition, results of operations, and cash flows.

Note 3—Investment in Laramie Energy, LLC

As of December 31, 2019, we owned a 46.0% ownership interest in Laramie Energy, a joint venture entity focused on developing and producing natural gas in Garfield, Mesa, and Rio Blanco Counties, Colorado. Laramie Energy has a $400 million revolving credit facility secured by a lien on its natural gas and crude oil properties and related assets with a borrowing base currently set at $220 million. As of December 31, 2019 and 2018, the balance outstanding on the revolving credit facility was approximately $201.2 million and $210.8 million, respectively. We are guarantors of Laramie Energy’s credit facility, with recourse limited to the pledge of our equity interest in our wholly owned subsidiary, Par Piceance Energy Equity, LLC. Under the terms of its credit facility, Laramie Energy is generally prohibited from making future cash distributions to its owners, including us. Laramie Energy’s credit facility matures on December 15, 2020.

During the fourth quarter of 2019, Laramie Energy recorded an impairment loss of $355.2 million associated with the carrying value of proved reserves. As a result of Laramie Energy’s impairment loss and the liquidity impact associated with the maturity of the revolving credit facility in December 2020, we updated the impairment evaluation of our investment in Laramie Energy as of December 31, 2019. The fair value estimate was determined using a discounted cash flow analysis based on reserves volumes and natural gas forward strip prices as of December 31, 2019. Based on our evaluation, we determined that the estimated fair value of our investment in Laramie Energy approximates carrying value as of December 31, 2019.

At September 30, 2019, we conducted an impairment evaluation of our investment in Laramie Energy because of the significant decline in natural gas prices over the second quarter of 2019 and continued deterioration in the third quarter of 2019. Based on our evaluation, we determined that the estimated fair value of our investment in Laramie Energy was $51.8 million, compared to a carrying value of $133.3 million at September 30, 2019. The fair value estimate was determined using a discounted cash flow analysis based on natural gas forward strip prices as of September 30, 2019 for two years through December 31, 2021. A blend of 2021 forward strip pricing and third-party analyst pricing was used for years after 2021 through December 31, 2028. Other significant inputs used in the discounted cash flow analysis included proved and unproved reserves information, forecasts of operating expenditures, and the applicable discount rate. As part of our evaluation, we considered the likelihood that Colorado Interstate Gas (CIG) prices, which have declined from an average spot price of $2.48 ($/MMBtu) in the first quarter of 2019, to $1.84 ($/MMBtu) in the second quarter of 2019 and $1.77 ($/MMBtu) in the third quarter of 2019, will recover in the near term. Based on this significant decline in natural gas prices and the reduced likelihood that natural gas prices would recover in the near term, we concluded that the decline in the fair value of our investment in Laramie Energy was other than temporary. As a result, we recorded an impairment charge of $81.5 million in Equity earnings (losses) from Laramie Energy, LLC on our statement of operations for the year ended December 31, 2019.

On March 4, 2019, Laramie entered into a binding agreement to divest an insignificant amount of producing property for approximately $17.5 million. This divestiture did not result in a change in our ownership percentage.

On October 18, 2018, Laramie Energy repurchased 138,795 of its Class A Units from certain unitholders for an aggregate purchase price of $14.8 million. As a result of this transaction, our ownership interest in Laramie Energy increased from 39.1% to 46.0%.

On February 28, 2018, Laramie Energy closed on a purchase and contribution agreement with an unaffiliated third party that contributed all of its oil and gas properties located in the Piceance Basin and a $20.0 million cash payment, collectively with a fair market value of $28.1 million, into Laramie Energy in exchange for 70,227 of Laramie Energy's newly issued Class A Units. The unaffiliated third party also contributed a $3.5 million cash payment for asset reclamation liabilities related to the properties conveyed. As a result of this transaction, our ownership interest in Laramie Energy decreased from 42.3% to 39.1%.

The change in our equity investment in Laramie Energy is as follows (in thousands):

	Year Ended December 31,		
	2019	**2018**	**2017**
Beginning balance	$ 136,656	$ 127,192	$ 108,823
Equity earnings (losses) from Laramie Energy	(175,018)	4,487	13,043
Accretion of basis difference	5,018	4,977	5,326
Adjustment of basis difference (1)	161,764	—	—
Impairment of our investment in Laramie Energy	(81,515)	—	—
Ending balance	$ 46,905	$ 136,656	$ 127,192

(1) Represents the reduction in our basis difference resulting from the asset impairment loss recorded by Laramie Energy for the year ended December 31, 2019.

Summarized financial information for Laramie Energy is as follows (in thousands):

	December 31,	
	2019	**2018**
Current assets	$ 23,367	$ 28,569
Non-current assets	393,575	788,515
Current liabilities	229,687	41,681
Non-current liabilities	85,287	293,084

	Year Ended December 31,		
	2019	2018	2017
Natural gas and oil revenues	$ 193,906	$ 226,974	$ 157,879
Income (loss) from operations	(360,967)	34,206	6,019
Net income (loss)	(380,473)	6,347	30,837

Laramie Energy's net loss for the year ended December 31, 2019 includes an asset impairment loss of $355.2 million. Laramie Energy's net loss for the year ended December 31, 2019 also includes $82.6 million and $4.3 million of DD&A expense and unrealized gains on derivative instruments, respectively. Laramie Energy's net loss for the year ended December 31, 2019 also includes an asset impairment loss of $355.2 million. Laramie Energy's net income for the year ended December 31, 2018 includes $66.6 million and $4.1 million of DD&A expense and unrealized losses on derivative instruments, respectively. Laramie Energy's net income for the year ended December 31, 2017 includes $50.3 million and $46.2 million of DD&A expense and unrealized gains on derivative instruments, respectively.

At September 30, 2019, our equity in the underlying net assets of Laramie Energy exceeded the carrying value of our investment by approximately $161.8 million. This difference arose primarily due to other-than-temporary impairments of our equity investment in Laramie Energy. As a result of Laramie Energy's $355.2 million impairment loss associated with the carrying value of proved reserves, there was no difference between our equity in the underlying net assets of Laramie Energy and the carrying value of our investment at December 31, 2019.

Note 4—Acquisitions

Washington Acquisition

On November 26, 2018, we entered into a Purchase and Sale Agreement to acquire U.S. Oil & Refining Co. and certain affiliated entities (collectively, "U.S. Oil"), a privately-held downstream business (the "Washington Acquisition"). The Washington Acquisition included a 42 Mbpd refinery, a marine terminal, a unit train-capable rail loading terminal, and 2.9 MMbbls of refined product and crude oil storage. The refinery and associated logistics system are strategically located in Tacoma, Washington, and currently serve the Pacific Northwest market. On January 11, 2019, we completed the Washington Acquisition for a total purchase price of $326.5 million, including acquired working capital, consisting of cash consideration of $289.5 million and approximately 2.4 million shares of Par's common stock with a fair value of $37.0 million issued to the seller of U.S. Oil. The cash consideration was funded in part through cash on hand, proceeds from borrowings under a new term loan facility entered into with Goldman Sachs Bank USA, as administrative agent, of $250.0 million (the "Term Loan B") and proceeds from borrowings under a term loan from the Bank of Hawaii of $45.0 million (the "Par Pacific Term Loan"). Please read Note 12—Debt for further information on the Term Loan B and Par Pacific Term Loan. During December 2018 and January 2019, we incurred $4.2 million and $5.4 million of commitment fees associated with the funding of the Washington Acquisition, respectively. Such commitment fees are presented as Debt extinguishment and commitment costs on our consolidated statements of operations for the years ended December 31, 2019 and 2018.

In connection with the consummation of the Washington Acquisition, we assumed the Washington Refinery Intermediation Agreement with MLC that provides a structured financing arrangement based on U.S. Oil's crude oil and refined products inventories and associated accounts receivable. Please read Note 11—Inventory Financing Agreements for further information on the Washington Refinery Intermediation Agreement.

We accounted for the Washington Acquisition as a business combination whereby the purchase price is allocated to the assets acquired and liabilities assumed based on their estimated fair values on the date of the acquisition. Goodwill recognized in the transaction was attributable to opportunities expected to arise from combining our operations with those of the Washington refinery and the utilization of our net operating loss carryforwards, as well as other intangible assets that do not qualify for separate recognition. Goodwill recognized as a result of the Washington Acquisition is not expected to be deductible for income tax reporting purposes.

A summary of the fair value of the assets acquired and liabilities assumed is as follows (in thousands):

Cash	$	16,146
Accounts receivable		34,954
Inventories		98,367
Prepaid and other assets		5,320
Property, plant, and equipment		412,766
Operating lease assets		62,337
Goodwill (1)		42,522
Total assets (2)		672,412
Obligations under inventory financing agreements		(116,873)
Accounts payable		(55,357)
Current operating lease liabilities		(21,571)
Other current liabilities		(18,411)
Long-term operating lease liabilities		(40,766)
Deferred tax liability		(92,103)
Other non-current liabilities		(804)
Total liabilities		(345,885)
Total	$	326,527

(1) We allocated $24.7 million and $17.8 million of goodwill to our refining and logistics segments, respectively.

(2) We allocated $403.9 million and $268.5 million of total assets to our refining and logistics segments, respectively.

During the period from March 31, 2019 to December 31, 2019, the purchase price allocation was adjusted to record an increase in the property, plant, and equipment valuation of $2.1 million, a decrease in the deferred tax liability of $3.7 million, and a net decrease in working capital adjustments of $1.8 million. Goodwill decreased $4.0 million as a result of these adjusting entries. As of December 31, 2019, we finalized the Washington Acquisition purchase price allocation.

We incurred $2.2 million and $2.6 million of acquisition costs related to the Washington Acquisition for the years ended December 31, 2019 and 2018, respectively. These costs are included in Acquisition and integration costs on our consolidated statements of operations.

The results of operations of U.S. Oil were included in our results beginning on January 11, 2019. For the year ended December 31, 2019, our results of operations included revenues of $1.2 billion and income before income taxes of $65.8 million related to U.S. Oil. The following unaudited pro forma financial information presents our consolidated revenues and net income (loss) as if the Washington Acquisition had been completed on January 1, 2018 (in thousands except per share information):

	Year Ended December 31,			
		2019		2018
Revenues	$	5,429,530	$	4,709,850
Net income (loss)		(4,547)		88,174
Income (loss) per share				
Basic	$	(0.09)	$	1.81
Diluted	$	(0.09)	$	1.79

These pro forma results were based on estimates and assumptions that we believe are reasonable. They are not necessarily indicative of our consolidated results of operations in future periods or the results that actually would have been realized had we been a combined company during the periods presented. The pro forma results for the years ended December 31, 2019 and 2018 include adjustments to remeasure U.S. Oil's LIFO inventory reserve as if the Washington Acquisition had been completed on January 1, 2018, record interest and other debt extinguishment costs related to issuance of the Term Loan B and Par Pacific Term Loan, and adjust U.S. Oil's historical depreciation expense as a result of the fair value adjustment to Property, plant, and equipment, net. The pro forma results for the year ended December 31, 2019 also include an adjustment to eliminate the $64.2 million tax benefit associated with a partial release of our valuation allowance in connection with the Washington Acquisition.

Par West Acquisition

On August 29, 2018, we entered into a Topping Unit Purchase Agreement with IES Downstream, LLC ("IES") to purchase certain of IES's refining units and related assets in addition to certain hydrocarbon and non-hydrocarbon inventory (collectively, the "Par West Acquisition"). On December 19, 2018, we completed the asset purchase for total consideration of approximately $66.9 million, net of a $4.3 million receivable related to net working capital adjustments. The purchase price consisted of $47.6 million in cash and approximately 1.1 million shares of our common stock with a fair value of $19.3 million.

We accounted for the Par West Acquisition as an asset acquisition whereby the purchase price was allocated entirely to the assets acquired. Of the total purchase price of $66.9 million, $45.2 million was allocated to property, plant, and equipment, $4.3 million to non-hydrocarbon inventory, and $17.4 million to hydrocarbon inventory. With the completion of the Par West Acquisition, we now have two refineries in Hawaii that are approximately two miles from one another: Par East, our legacy refinery assets, and Par West, the recently-acquired assets.

We incurred $5.7 million of acquisition costs related to the Par West Acquisition for the year ended December 31, 2018. These costs are included in Acquisition and integration costs on our consolidated statement of operations.

Northwest Retail Acquisition

On January 9, 2018, we entered into an Asset Purchase Agreement with CHS, Inc. to acquire twenty-one (21) owned retail gasoline, convenience store facilities and twelve (12) leased retail gasoline, convenience store facilities, all at various locations in Washington and Idaho (collectively, "Northwest Retail"). On March 23, 2018, we completed the acquisition for cash consideration of approximately $74.5 million (the "Northwest Retail Acquisition").

As part of the Northwest Retail Acquisition, Par and CHS, Inc. entered into a multi-year branded petroleum marketing agreement for the continued supply of Cenex®-branded refined products to the acquired Cenex® Zip Trip convenience stores. In addition, the parties also entered into a multi-year supply agreement pursuant to which Par supplies refined products to CHS, Inc. within the Rocky Mountain and Pacific Northwest markets.

We accounted for the acquisition of Northwest Retail as a business combination whereby the purchase price was allocated to the assets acquired and liabilities assumed based on their estimated fair values on the date of acquisition. Goodwill recognized in the transaction was attributable to opportunities expected to arise from combining our operations with Northwest Retail and utilization of our net operating loss carryforwards, as well as intangible assets that do not qualify for separate recognition. Goodwill recognized as a result of the Northwest Retail Acquisition is expected to be deductible for income tax reporting purposes.

A summary of the fair value of the assets acquired and liabilities assumed is as follows (in thousands):

Cash	$ 200
Inventories	4,138
Prepaid and other current assets	243
Property, plant, and equipment	30,230
Goodwill (1)	46,210
Accounts payable and other current liabilities	(759)
Long-term capital lease obligations	(5,244)
Other non-current liabilities	(487)
Total	$ 74,531

(1) The total goodwill balance of $46.2 million was allocated to our retail segment.

As of December 31, 2018, we finalized the Northwest Retail Acquisition purchase price allocation. We incurred $0.6 million of acquisition costs related to the Northwest Retail Acquisition for the year ended December 31, 2018. These costs are included in Acquisition and integration costs on our consolidated statement of operations.

Note 5—Revenue Recognition

As of December 31, 2019 and 2018, receivables from contracts with customers were $214.5 million and $148.4 million, respectively. Our refining segment recognizes deferred revenues when cash payments are received in advance of delivery of products to the customer. Deferred revenue was $7.9 million and $6.7 million as of December 31, 2019 and 2018, respectively. We have elected to apply a practical expedient not to disclose the value of unsatisfied performance obligations for (i) contracts with an original expected duration of less than one year and (ii) contracts where the variable consideration has been allocated entirely to our unsatisfied performance obligation.

The following table provides information about disaggregated revenue by major product line and includes a reconciliation of the disaggregated revenues to total segment revenues (in thousands):

Year Ended December 31, 2019	Refining	Logistics	Retail
Product or service:			
Gasoline	$ 1,416,706	$ —	$ 326,304
Distillates (1)	2,503,981	—	40,189
Other refined products (2)	1,242,401	—	—
Merchandise	—	—	90,480
Transportation and terminalling services	—	199,226	—
Other revenue	4,854	—	1,916
Total segment revenues (3)	$ 5,167,942	$ 199,226	$ 458,889

Year Ended December 31, 2018	Refining	Logistics	Retail
Product or service:			
Gasoline	$ 981,090	$ —	$ 317,434
Distillates (1)	1,770,381	—	39,835
Other refined products (2)	458,596	—	—
Merchandise	—	—	83,771
Transportation and terminalling services	—	125,743	—
Total segment revenues (3)	$ 3,210,067	$ 125,743	$ 441,040

(1) Distillates primarily include diesel and jet fuel.

(2) Other refined products include fuel oil, gas oil, asphalt, and naphtha.

(3) Refer to Note 21—Segment Information for the reconciliation of segment revenues to total consolidated revenues.

Note 6—Inventories

Inventories at December 31, 2019 and 2018 consisted of the following (in thousands):

	Titled Inventory	Supply and Offtake Agreements (1)	Total
December 31, 2019			
Crude oil and feedstocks	$ 117,717	$ 148,303	$ 266,020
Refined products and blendstock	127,966	158,737	286,703
Warehouse stock and other (2)	63,149	—	63,149
Total	$ 308,832	$ 307,040	$ 615,872
December 31, 2018			
Crude oil and feedstocks	$ 7,000	$ 117,877	$ 124,877
Refined products and blendstock	62,401	100,175	162,576
Warehouse stock and other (2)	34,612	—	34,612
Total	$ 104,013	$ 218,052	$ 322,065

(1) Please read Note 11—Inventory Financing Agreements for further information.

(2) Includes $19.1 million and $5.0 million of RINs and environmental credits as of December 31, 2019 and 2018, respectively.

As of December 31, 2019, there was no reserve for the lower of cost or net realizable value of inventory. As of December 31, 2018, there was a $3.8 million reserve for the lower of cost or net realizable value of inventory. As of December 31, 2019, the excess of current replacement cost over the LIFO inventory carrying value at the Washington refinery was approximately $6.4 million.

Note 7—Prepaid and Other Current Assets

Prepaid and other current assets at December 31, 2019 and 2018 consisted of the following (in thousands):

	December 31,	
	2019	2018
Advances to suppliers	$ 27,635	$ —
Collateral posted with broker for derivative instruments (1)	10,306	2,759
Prepaid insurance	13,536	7,727
Derivative assets	2,075	5,164
Other	5,604	12,720
Total	$ 59,156	$ 28,370

(1) Our cash margin that is required as collateral deposits on our commodity derivatives cannot be offset against the fair value of open contracts except in the event of default. Please read Note 13—Derivatives for further information.

Note 8—Property, Plant, and Equipment

Major classes of property, plant, and equipment, including assets acquired under finance leases, consisted of the following (in thousands):

	December 31,	
	2019	2018
Land	$ 188,096	$ 117,559
Buildings and equipment (1)	937,926	512,870
Other (1)	20,961	18,939
Total property, plant, and equipment	1,146,983	649,368
Proved oil and gas properties	—	400
Less accumulated depreciation, depletion, and amortization	(185,040)	(111,507)
Property, plant, and equipment, net	$ 961,943	$ 538,261

(1) Please read Note 15—Leases for further disclosures and information on leases.

Depreciation and finance lease amortization expense was approximately $75.2 million, $39.0 million, and $31.8 million for the years ended December 31, 2019, 2018, and 2017, respectively.

Note 9—Asset Retirement Obligations

The table below summarizes the changes in our recorded asset retirement obligations (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Beginning balance	$ 9,985	$ 9,103	$ 9,042
Obligations acquired	—	487	—
Accretion expense	331	395	369
Liabilities settled during period	(136)	—	(308)
Ending balance	$ 10,180	$ 9,985	$ 9,103

Note 10—Goodwill and Intangible Assets

During the years ended December 31, 2019 and 2018, the change in the carrying amount of goodwill was as follows (in thousands):

Balance at January 1, 2018	$ 107,187
Acquisition of Northwest Retail (1)	46,210
Balance at December 31, 2018	153,397
Acquisition of U.S. Oil (1)	42,522
Balance at December 31, 2019	$ 195,919

(1) Please read Note 4—Acquisitions for further discussion.

Intangible assets consisted of the following (in thousands):

	December 31, 2019	December 31, 2018
Intangible assets:		
Trade names and trademarks	$ 6,267	$ 6,267
Customer relationships	32,064	32,064
Other	261	—
Total intangible assets	38,592	38,331
Accumulated amortization:		
Trade name and trademarks	(5,124)	(5,037)
Customer relationships	(11,919)	(9,347)
Other	—	—
Total accumulated amortization	(17,043)	(14,384)
Net:		
Trade name and trademarks	1,143	1,230
Customer relationships	20,145	22,717
Other	261	—
Total intangible assets, net	$ 21,549	$ 23,947

Amortization expense was approximately $2.7 million, $2.7 million, and $3.3 million for the years ended December 31, 2019, 2018, and 2017, respectively. Our intangible assets related to customer relationships and trade names have an average useful life of 13.5 years. Expected amortization expense for each of the next five years and thereafter is as follows (in thousands):

Year Ended	Amount
2020	$ 2,658
2021	2,658
2022	2,658
2023	2,658
2024	1,400
Thereafter	9,517
	$ 21,549

Note 11—Inventory Financing Agreements

Supply and Offtake Agreements

On June 1, 2015, we entered into several agreements with J. Aron to support the operations of our Hawaii refineries (the “Supply and Offtake Agreements”). The Supply and Offtake Agreements mature on May 31, 2021 and have a one-year extension option upon mutual agreement of the parties. Under the Supply and Offtake Agreements, J. Aron may enter into agreements with third parties whereby J. Aron will remit payments to these third parties for refinery procurement contracts for which we will become immediately obligated to reimburse J. Aron. As of December 31, 2019, we had no obligations due to J. Aron under this contractual undertakings agreement. On December 21, 2017, in connection with the issuance of the 7.75% Senior Secured Notes, we amended and restated the Supply and Offtake Agreements to update the terms of the collateral. On June 27, 2018, we and J. Aron amended the Supply and Offtake Agreements to increase the amount that we may defer under the deferred payment arrangement. Prior to June 27, 2018, we had the right to defer payments owed to J. Aron up to the lesser of $125 million or 85% of eligible accounts receivable and inventory. Effective June 27, 2018, we have the right to defer payments owed to J. Aron up to the lesser of $165 million or 85% of eligible accounts receivable and inventory. On December 5, 2018, we amended the Supply and Offtake Agreements to account for additional processing capacity expected to be provided through the Par West Acquisition. The December 5, 2018 amendment to the Supply and Offtake Agreements also (i) required us to increase our margin requirements by an aggregate $2.5 million by making certain additional margin payments on December 19, 2018, March 1, 2019, and June 3, 2019, and (ii) only allows dividends, payments, or other distributions with respect to any equity interests in Par Hawaii Refining, LLC ("PHR") in limited and restricted circumstances.

During the term of the Supply and Offtake Agreements, J. Aron and we will identify mutually acceptable contracts for the purchase of crude oil from third parties. Per the Supply and Offtake Agreements, J. Aron will provide up to 150 Mbpd of crude oil to our Hawaii refineries. Additionally, we agreed to sell and J. Aron agreed to buy, at market prices, refined products produced at our Hawaii refineries. We will then repurchase the refined products from J. Aron prior to selling the refined products to our retail operations or to third parties. The agreements also provide for the lease of crude oil and certain refined product storage facilities to J. Aron. Following the expiration or termination of the Supply and Offtake Agreements, we are obligated to purchase the crude oil and refined product inventories then owned by J. Aron and located at the leased storage facilities at then-current market prices.

Though title to the crude oil and certain refined product inventories resides with J. Aron, the Supply and Offtake Agreements are accounted for similar to a product financing arrangement; therefore, the crude oil and refined products inventories will continue to be included on our consolidated balance sheets until processed and sold to a third party. Each reporting period, we record a liability in an amount equal to the amount we expect to pay to repurchase the inventory held by J. Aron based on current market prices.

For the years ended December 31, 2019, 2018, and 2017, we incurred approximately $35.5 million, $21.5 million, and $13.7 million, respectively, of inventory intermediation fees related to the Supply and Offtake Agreements, which are included in Cost of revenues (excluding depreciation) on our consolidated statements of operations. For the years ended December 31, 2019, 2018, and 2017, Interest expense and financing costs, net on our consolidated statements of operations includes approximately $5.9 million, $4.5 million, and $2.3 million of expenses related to the Supply and Offtake Agreements, respectively.

The Supply and Offtake Agreements also include a deferred payment arrangement ("Deferred Payment Arrangement") whereby we can defer payments owed under the agreements up to the lesser of $165 million or 85% of the eligible accounts receivable and inventory. Upon execution of the Supply and Offtake Agreements, we paid J. Aron a deferral arrangement fee of $1.3 million. The deferred amounts under the Deferred Payment Arrangement bear interest at a rate equal to three-month LIBOR plus 3.50% per annum. We also agreed to pay a deferred payment availability fee equal to 0.75% of the unused capacity under the Deferred Payment Arrangement. Amounts outstanding under the Deferred Payment Arrangement are included in Obligations under inventory financing agreements on our consolidated balance sheets. Changes in the amount outstanding under the Deferred Payment Arrangement are included within Cash flows from financing activities on the consolidated statements of cash flows. As of December 31, 2019 and 2018, the capacity of the Deferred Payment Arrangement was $155.5 million and $77.4 million, respectively, and we had $97.5 million and $68.4 million outstanding, respectively.

Under the Supply and Offtake Agreements, we pay or receive certain fees from J. Aron based on changes in market prices over time. In February 2016, we fixed the market fee for the period from December 1, 2016 through May 31, 2018 for $14.6 million to be settled in eighteen equal monthly payments. In 2017, we fixed the market fee for the period from June 1, 2018 through May 2021 for an additional $2.2 million. The receivable from J. Aron was recorded as a reduction to our Obligations under inventory financing agreements pursuant to our Master Netting Agreement. As of December 31, 2019 and 2018, the receivable was $0.5 million and $2.5 million, respectively.

Washington Refinery Intermediation Agreement

In connection with the consummation of the Washington Acquisition, we became a party to the Washington Refinery Intermediation Agreement with MLC that provides a structured financing arrangement based on U.S. Oil's crude oil and refined products inventories and associated accounts receivable. Under this arrangement, U.S. Oil purchases crude oil supplied from third-party suppliers and MLC provides credit support for such crude oil purchases. MLC's credit support can consist of either providing a payment guaranty, causing the issuance of a letter of credit from a third-party issuing bank, or purchasing crude oil directly from third parties on our behalf. U.S. Oil holds title to all crude oil and refined products inventories at all times and pledges such inventories, together with all receivables arising from the sales of same, exclusively to MLC. On November 1, 2019, we and MLC amended the Washington Refinery Intermediation Agreement and extended the term through June 30, 2021, with an option for us to early terminate as early as March 31, 2021.

During the remaining term of the Washington Refinery Intermediation Agreement, MLC will make receivable advances to U.S. Oil based on an advance rate of 95% of eligible receivables, up to a total receivables advance maximum of $90.0 million (the "MLC receivable advances"), and additional advances based on crude oil and products inventories. Changes in the amount outstanding under the MLC receivable advances are included within Cash flows from financing activities on the consolidated statements of cash flows. The MLC receivable advances bear interest at a rate equal to three-month LIBOR plus 3.25% per annum. We also agreed to pay an availability fee equal to 1.50% of the unused capacity under the MLC receivable advances. As part of the November 1, 2019 amendment, the availability fee was amended to equal 0.75% of the unused capacity under the MLC receivable advances. As of December 31, 2019, our outstanding balance under MLC receivable advances was equal to our borrowing base of $63.8 million. Additionally, as of December 31, 2019, we had approximately $127.2 million in letters of credit outstanding through MLC's credit support.

For the year ended December 31, 2019, we incurred approximately $3.7 million of inventory intermediation fees related to the Washington Refinery Intermediation Agreement which are included in Cost of revenues (excluding depreciation) on our consolidated statements of operations. For the year ended December 31, 2019, Interest expense and financing costs, net on our consolidated statements of operations includes approximately $6.4 million of expenses related to the Washington Refinery Intermediation Agreement.

The Supply and Offtake Agreements and the Washington Refinery Intermediation Agreement also provide us with the ability to economically hedge price risk on our inventories and crude oil purchases. Please read Note 13—Derivatives for further information.

Note 12—Debt

The following table summarizes our outstanding debt (in thousands):

	December 31,	
	2019	2018
5.00% Convertible Senior Notes due 2021	$ 48,665	$ 115,000
7.75% Senior Secured Notes due 2025	300,000	300,000
ABL Credit Facility	—	—
Mid Pac Term Loan	1,433	1,466
Term Loan B	240,625	—
Retail Property Term Loan	44,014	—
Principal amount of long-term debt	634,737	416,466
Less: unamortized discount and deferred financing costs	(22,806)	(23,826)
Total debt, net of unamortized discount and deferred financing costs	611,931	392,640
Less: current maturities, net of unamortized discount and deferred financing costs	(12,297)	(33)
Long-term debt, net of current maturities	$ 599,634	$ 392,607

Annual maturities of our long-term debt for the next five years and thereafter are as follows (in thousands):

Year Ended	Amount Due
2020	$ 14,054
2021	62,785
2022	14,187
2023	14,259
2024	50,080
Thereafter	479,372
Total	$ 634,737

Additionally, as of December 31, 2019 and 2018, we had approximately $0.2 million and $13.5 million in letters of credit outstanding under the ABL Credit Facility, respectively. As of December 31, 2019, we also had $3.6 million in cash-collateralized letters of credit and surety bonds outstanding.

Under the ABL Credit Facility, the indenture governing the 7.75% Senior Secured Notes and the Term Loan B Facility, our subsidiaries are restricted from paying dividends or making other equity distributions, subject to certain exceptions.

7.75% Senior Secured Notes Due 2025

On December 21, 2017, Par Petroleum, LLC and Par Petroleum Finance Corp. (collectively, the "Issuers"), both our wholly owned subsidiaries, completed the issuance and sale of $300 million in aggregate principal amount of 7.75% Senior Secured Notes in a private placement under Rule 144A and Regulation S of the Securities Act of 1933, as amended. The net proceeds of $289.2 million (net of financing costs and original issue discount of 1%) from the sale were used to repay the Hawaii Retail Credit Facilities, the Wyoming Refining Credit Facilities, the Par Wyoming Holdings Credit Agreement, and the J. Aron Forward Sale, and for general corporate purposes.

The 7.75% Senior Secured Notes bear interest at a rate of 7.750% per year beginning December 21, 2017 (payable semi-annually in arrears on June 15 and December 15 of each year, beginning on June 15, 2018) and will mature on December 15, 2025.

The indenture governing the 7.75% Senior Secured Notes contains restrictive covenants limiting the ability of Par Petroleum, LLC and its Restricted Subsidiaries (as defined in the indenture) to, among other things, incur additional indebtedness, issue certain preferred shares, create liens on certain assets to secure debt, sell or otherwise dispose of all or substantially all assets, or pay dividends.

The 7.75% Senior Secured Notes are secured on a pari passu basis by first priority liens (subject to the relative priority of permitted liens) on substantially all of the property and assets of the Issuers and the subsidiary guarantors, including but not limited to, material real property now owned or hereafter acquired by the Issuers or subsidiary guarantors and their equipment, intellectual property, and equity interests, but excluding certain property which is collateral under the ABL Credit Facility, the Supply and Offtake Agreements, and the Washington Refinery Intermediation Agreement. The 7.75% Senior Secured Notes are fully and unconditionally guaranteed on a senior secured basis, jointly and severally, by each of Par Petroleum, LLC's existing wholly owned subsidiaries (other than Par Petroleum Finance Corp.), and are guaranteed on a senior unsecured basis only as to the payment of principal and interest by Par Pacific Holdings, Inc. In the future, the 7.75% Senior Secured Notes will be guaranteed on a senior secured basis by additional subsidiaries of Par Petroleum, LLC that guarantee material indebtedness of the Issuers or otherwise become obligated with respect to material indebtedness under a credit facility, subject to certain exceptions.

ABL Credit Facility

On December 21, 2017, in connection with the issuance of the 7.75% Senior Secured Notes, Par Petroleum, LLC, Par Hawaii, LLC ("PHL", formerly known as Par Hawaii, Inc. and includes the assets previously owned by the dissolved entities Mid Pac Petroleum, LLC and HIE Retail, LLC), Hermes Consolidated, LLC, and Wyoming Pipeline Company (collectively, the "ABL Borrowers"), entered into a Loan and Security Agreement dated as of December 21, 2017 (the "ABL Credit Facility") with certain lenders and Bank of America, N.A., as administrative agent and collateral agent. The ABL Credit Facility provides for a revolving credit facility that provides for revolving loans and for the issuance of letters of credit (the "ABL Revolver"). On July 24, 2018, we amended the ABL Credit Facility to increase the maximum principal amount at any time outstanding of the ABL Revolver by $10 million to $85 million, subject to a borrowing base. As of December 31, 2019, the ABL Revolver had no outstanding balance and a borrowing base of approximately $57.6 million.

The revolving loans under the ABL Revolver bear interest at a fluctuating rate per annum equal to (i) during the periods such revolving loan is a base rate loan, the base rate plus the applicable margin in effect from time to time, and (ii) during the periods such revolving loan is a LIBOR Loan, at LIBOR for the applicable interest period plus the applicable margin in effect from time to time. The base rate is equal to (i) daily LIBOR ("LIBOR Daily Floating Rate") or (ii) if the LIBOR Daily Floating Rate is unavailable for any reason, a rate as calculated per the agreement (the "Prime Rate") for such day. We also pay a *de minimis* fee for any undrawn amounts available under the ABL Revolver. The maturity date of the ABL Revolver is December 21, 2022, on which date all revolving loans will be due and payable in full. The average effective interest rate for 2019 on the ABL Revolver loan was 4.3%.

The applicable margins for the ABL Credit Facility and advances under the ABL Revolver are as specified below:

Level	Arithmetic Mean of Daily Availability (as a percentage of the borrowing base)	Applicable Margin for LIBOR Loans and Base Rate Loans Subject to LIBOR Daily Floating Rate	Applicable Margin for Base Rate Loans Subject to the Prime Rate
1	>50%	1.75%	0.75%
2	>30% but ≤50%	2.00%	1.00%
3	≤30%	2.25%	1.25%

The obligations of the ABL Borrowers are guaranteed by Par and Par Petroleum, LLC's existing and future direct or indirect domestic subsidiaries that are not borrowers under the ABL Credit Facility. The loans and letters of credit issued under the ABL Credit Facility are secured by a first-priority security interest in and lien on certain assets of the borrowers and the guarantors, including cash and cash equivalents and inventory, and excluding the assets of PHR and U.S. Oil.

Mid Pac Term Loan

On September 27, 2018, Mid Pac Petroleum, LLC, now dissolved and whose assets are now included in PHL, our wholly owned subsidiary, entered into the Mid Pac Term Loan with American Savings Bank, FSB, which provided a term loan of up to $1.5 million. We received the proceeds on October 18, 2018, which were used to purchase certain retail property. The Mid Pac Term Loan is scheduled to mature on October 18, 2028.

The Mid Pac Term Loan is payable monthly, bears interest at an annual rate of 4.375%, is secured by a first-priority lien on the real property purchased with the funds, including leases and rents on the property and the property's fixed assets and fixtures, and is guaranteed by Par Petroleum, LLC.

5.00% Convertible Senior Notes Due 2021

In June 2016, we completed the issuance and sale of $115 million in aggregate principal amount of the 5.00% Convertible Senior Notes in a private placement under Rule 144A (the "Notes Offering"). The Notes Offering included the exercise in full of an option to purchase an additional $15 million in aggregate principal amount of the 5.00% Convertible Senior Notes granted to the initial purchasers. The net proceeds of $111.6 million (net of original issue discount of 3%) from the sale of the 5.00% Convertible Senior Notes were used to finance a portion of the acquisition of the Wyoming refinery and related logistics assets (the "WRC Acquisition"), to repay $5 million in principal amount of the Term Loan (as defined below), and for general corporate purposes.

The 5.00% Convertible Senior Notes bear interest at a rate of 5.00% per year beginning June 21, 2016 (payable semi-annually in arrears on June 15 and December 15 of each year, beginning on December 15, 2016) and will mature on June 15, 2021. The initial conversion rate for the notes is 55.5556 shares of common stock per $1,000 principal amount of the 5.00% Convertible Senior Notes (or a total amount of 6,388,894 shares), which is equivalent to an initial conversion price of approximately $18.00 per share of common stock, subject to adjustment upon the occurrence of certain events. Conversions of the 5.00% Convertible Senior Notes will be settled in cash, shares of common stock, or a combination thereof at our election. The holders of the 5.00% Convertible Senior Notes may exercise their conversion rights at any time prior to the close of business on the business day immediately preceding the maturity date under certain circumstances.

The 5.00% Convertible Senior Notes were not redeemable by us prior to June 20, 2019. On or after June 20, 2019, we may redeem all or any portion of the 5.00% Convertible Senior Notes if the last reported sales price of our common stock is at least 140% of the conversion price then in effect (i) on the trading day immediately preceding the date on which we provide notice of redemption and (ii) for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period ending on, and including, the trading day immediately preceding the date on which we provide notice of redemption at a redemption price equal to 100% of the principal amount of the 5.00% Convertible Senior Notes to be redeemed, plus accrued and unpaid interest and a make-whole premium, which is equal to the present value of the remaining scheduled payments of interest on the 5.00% Convertible Senior Notes to be redeemed from the relevant redemption date to the maturity date of June 15, 2021. We have determined that the redemption option and the related make-whole premium represent an embedded derivative that is not clearly and closely related to the 5.00% Convertible Senior Notes. Please read Note 13—Derivatives for further information on embedded derivatives.

During May, June, and December 2019, we entered into privately negotiated exchange agreements with a limited number of holders (the "Noteholders") to repurchase $66.3 million in aggregate principal amount of the 5.00% Convertible Senior Notes held by the Noteholders for an aggregate of $18.6 million in cash and approximately 3.2 million shares of Par's common stock with a fair value of $74.3 million. We recognized a loss of approximately $6.1 million related to the extinguishment of the repurchased 5.00% Convertible Senior Notes in the year ended December 31, 2019.

We separately account for the liability and equity components of the 5.00% Convertible Senior Notes. The fair value of the liability component was calculated using a discount rate of an identical debt instrument without a conversion feature. Based on this borrowing rate, the fair value of the liability component of the 5.00% Convertible Senior Notes on the issuance date was $89.3 million. The carrying amount of the equity component was determined to be $22.2 million by deducting the fair value of the liability component from the $111.6 million net proceeds of the 5.00% Convertible Senior Notes. The deferred financing costs of $0.6 million related to 5.00% Convertible Senior Notes were allocated on a proportionate basis between Long-term debt and Additional paid-in capital on the consolidated balance sheet. As of December 31, 2019, the if-converted value was $14.2 million in excess of the outstanding principal amount of the 5.00% Convertible Senior Notes.

As of December 31, 2019, the outstanding principal amount of the 5.00% Convertible Senior Notes was $48.7 million, the unamortized discount and deferred financing cost was $3.9 million and the carrying amount of the liability component was $44.8 million. The unamortized discount and deferred financing costs will be amortized to Interest expense and financing costs, net over the term of the 5.00% Convertible Senior Notes.

Term Loan B Facility

On January 11, 2019, Par Petroleum, LLC and Par Petroleum Finance Corp. entered into a new term loan facility with Goldman Sachs Bank USA, as administrative agent, and the lenders party thereto from time to time (the "Term Loan B Facility"). Pursuant to the Term Loan B Facility, the lenders made a term loan to the borrowers in the amount of $250.0 million ("Term Loan B") on the closing date. The net proceeds from Term Loan B totaled $232.0 million after deducting the original issue discount, deferred financing costs, and commitment and other fees.

Loans under the Term Loan B bear interest at a rate per annum equal to Adjusted LIBOR (as defined in the Term Loan B Facility) plus an applicable margin of 6.75% or at a rate per annum equal to Alternate Base Rate (as defined in the Term Loan B Facility) plus an applicable margin of 5.75%. The average effective interest rate for 2019 on the Term Loan B was 9.1%.

In addition to the quarterly interest payments, the Term Loan B requires quarterly principal payments of $3.1 million. The Term Loan B matures on January 11, 2026.

The obligations of the borrowers under the Term Loan B Facility are guaranteed by Par Petroleum, LLC's and Par Petroleum Finance Corp.'s existing and future direct or indirect domestic subsidiaries and, by Par Pacific Holdings, Inc., with respect to principal and interest only. The Term Loan B Facility is secured on a pari passu basis by first priority liens (subject to the relative priority of permitted liens) on substantially all of the property and assets of Par Petroleum, LLC, Par Petroleum Finance Corp., and their subsidiary guarantors, but excluding certain property which is collateral under the ABL Credit Facility, the Supply and Offtake Agreements, and the Washington Refinery Intermediation Agreement.

Par Pacific Term Loan Agreement

On January 9, 2019, we entered into a loan agreement (the "Par Pacific Term Loan Agreement") with the Bank of Hawaii ("BOH"). Pursuant to the Par Pacific Term Loan Agreement, BOH made a loan to the Company in the amount of $45.0 million (the "Par Pacific Term Loan").

During the term of the Par Pacific Term Loan, the interest payments were due monthly and were based on the outstanding principal balance multiplied by a floating rate equal to 3.50% above the applicable LIBOR rate (as defined in the Par Pacific Term Loan Agreement) subject to an increased default interest rate in the event of a default. The average effective interest rate for 2019 on the Par Pacific Term Loan was 1.3%.

The Par Pacific Term Loan Agreement was originally scheduled to mature on July 9, 2019. We terminated and repaid all amounts outstanding under the Par Pacific Term Loan Agreement on March 29, 2019 using the proceeds of the Retail Property Term Loan (as defined below). We recognized approximately $0.1 million of debt extinguishment costs related to the unamortized deferred financing costs associated with the Par Pacific Term Loan Agreement in the year ended December 31, 2019.

Retail Property Term Loan

On March 29, 2019, Par Pacific Hawaii Property Company, LLC ("Par Property LLC"), our wholly owned subsidiary, entered into a term loan agreement (the "Retail Property Term Loan") with BOH, which provided a term loan in the principal amount of $45.0 million. The proceeds from the Retail Property Term Loan were used to repay and terminate the Par Pacific Term Loan Agreement.

The Retail Property Term Loan is guaranteed by Par and secured by a lien on substantially all of the assets of Par Property LLC, including a mortgage lien on 21 retail properties in Hawaii (the "Portfolio Properties"). Certain covenants require us to maintain a loan-to-appraisal value of the Portfolio Properties ratio of not greater than 75% and an annual debt yield of at least 9%. Par is also subject to a minimum liquidity covenant measured on the last day of each fiscal quarter.

The Retail Property Term Loan bears interest based on a floating rate equal to the applicable LIBOR for a one-month interest period plus 1.5%. The average effective interest rate for 2019 on the Retail Property Term Loan was 3.8%. Principal and interest payments are payable monthly based on a 20-year amortization schedule, principal prepayments are allowed subject to applicable prepayment penalties, and the remaining unpaid principal, plus any unpaid interest or other charges, is due on April 1, 2024, the maturity date of the Retail Property Term Loan.

J. Aron Forward Sale

As part of the May 8, 2017 amendment to the Supply and Offtake Agreements, we also entered into a $30 million forward sale of jet fuel to be delivered to J. Aron over the amended term ("J. Aron Forward Sale"). The proceeds from the J. Aron Forward Sale were used to pay a portion of the outstanding balance on the Term Loan (as defined below). The cost of the J. Aron Forward Sale was based upon an annual interest rate of 7%.

Upon issuance of the 7.75% Senior Secured Notes on December 21, 2017, we repaid in full and terminated the J. Aron Forward Sale and recognized $0.3 million of costs associated with the termination of the agreement, which is included within Debt extinguishment and commitment costs on our consolidated statement of operations for the year ended December 31, 2017.

Par Wyoming Holdings Credit Agreement

On July 14, 2016, in connection with the WRC Acquisition, Par Wyoming Holdings, LLC, our indirect wholly owned subsidiary, entered into the Par Wyoming Holdings Credit Agreement with certain lenders and Chambers Energy Management, LP, as agent, which provided for a single advance secured term loan to our subsidiary in the amount of $65.0 million (the "Par Wyoming Holdings Term Loan") at the closing of the acquisition. The proceeds of the Par Wyoming Holdings Term Loan were used to pay a portion of the consideration for the acquisition, to pay certain fees and closing costs, and for general corporate purposes. The Par Wyoming Holdings Term Loan was originally scheduled to mature on July 14, 2021.

The Par Wyoming Holdings Term Loan bore interest at a rate equal to three-month LIBOR plus an applicable interest margin. With respect to cash interest, the applicable interest margin was at a rate per annum equal to 9.5%. With respect to paid-in-kind ("PIK") interest, the applicable interest margin was at a rate per annum equal to 13%. Interest was payable in arrears on (a) the last day of each fiscal quarter, (b) the maturity date, and (c) the date of any repayment or prepayment of the Par Wyoming Holdings Term Loan.

Upon issuance of the 7.75% Senior Secured Notes on December 21, 2017, we repaid in full and terminated the Par Wyoming Holdings Credit Agreement and recognized $5.2 million of costs associated with the termination of the agreement, which is included within Debt extinguishment and commitment costs on our consolidated statement of operations for the year ended December 31, 2017.

Wyoming Refining Credit Facilities

Wyoming Refining Company and its wholly owned subsidiary, Wyoming Pipeline Company, LLC, were borrowers (the "Wyoming Refining Credit Facility Borrowers") under a Third Amended and Restated Loan Agreement dated as of April 30, 2015 (as amended, the "Wyoming Refining Credit Facilities"), with Bank of America, N.A., as the lender. The Wyoming Refining Credit Facilities remained in place following the consummation of the WRC Acquisition.

On July 14, 2016, and in connection with the consummation of the acquisition, the Wyoming Refining Credit Facilities were amended pursuant to a Third Amendment to Third Amended and Restated Loan Agreement (the "Third Loan Amendment") and a Fourth Amendment to Third Amended and Restated Loan Agreement (the "Fourth Loan Amendment"). Pursuant to the Third Loan Amendment, which was entered into immediately prior to the consummation of the acquisition, Black Elk Refining, LLC was released from all of its obligations under the Wyoming Refining Credit Facilities and Par Wyoming, LLC joined and became a party to the Wyoming Refining Credit Facilities and the applicable security agreement and guaranteed all obligations of the borrowers under the Wyoming Refining Credit Facilities. The Fourth Loan Amendment was entered into immediately following the consummation of the acquisition and amended certain covenants in the Wyoming Refining Credit Facilities applicable to Par Wyoming, LLC and the Wyoming Refining Credit Facility Borrowers. On August 7, 2017, we entered into an amendment to the Wyoming Refining Credit Facilities to extend the maturity date from April 30, 2018 until June 30, 2019.

The Wyoming Refining Credit Facilities originally provided for (a) a revolving credit facility in the maximum principal amount at any time outstanding of $30 million (“Wyoming Refining Senior Secured Revolver”), subject to a borrowing base, which provided for revolving loans and for the issuance of letters of credit and (b) certain term loans that are fully advanced (“Wyoming Refining Senior Secured Term Loan”). The Wyoming Refining Senior Secured Term Loan bore interest at a rate equal to monthly LIBOR plus 3.0%. The Wyoming Refining Senior Secured Term Loan required quarterly principal payments of $2.3 million.

Upon issuance of the 7.75% Senior Secured Notes on December 21, 2017, we repaid in full and terminated the Wyoming Refining Credit Facilities and recognized $0.1 million of costs associated with the termination of the agreement, which is included within Debt extinguishment and commitment costs on our consolidated statement of operations for the year ended December 31, 2017.

Hawaii Retail Credit Facilities

On December 17, 2015, we entered into the Hawaii Retail Credit Facilities in the form of a revolving credit facility up to $5 million (“Hawaii Retail Revolving Credit Facilities”) that provided for revolving loans and for the issuance of letters of credit and term loans (“Hawaii Retail Term Loans”) in the aggregate principal amount of $110 million. The proceeds of the Hawaii Retail Term Loans were used to repay in full existing indebtedness under the previous credit facilities, to pay transaction fees and expenses, to repay a portion of existing indebtedness under the Term Loan (as defined below), and to facilitate a cash distribution to Par.

The Hawaii Retail Term Loans originally matured on December 17, 2022 and required principal payments of $2.75 million on the last business day of each fiscal quarter. The Hawaii Retail Revolving Credit Facilities originally matured on December 17, 2020.

The Hawaii Retail Term Loans and advances under the Hawaii Retail Revolving Credit Facilities bore interest at a fluctuating rate (i) during the periods such revolving loan or term loan, as applicable, equal to a Base Rate Loan, the Base Rate plus an applicable margin ranging from 1.50% to 2.25%, and (ii) during the periods such revolving loan or term loan, as applicable, equal to a Eurodollar Loan, the relevant Adjusted Eurodollar Rate for such Eurodollar Loan for the applicable interest period plus an applicable margin ranging from 2.50% to 3.25%. The effective interest rate for 2017 on the outstanding loan was 4.0%.

Upon issuance of the 7.75% Senior Secured Notes on December 21, 2017, we repaid in full and terminated the Hawaii Retail Credit Facilities and recognized $1.2 million of costs associated with the termination of the agreement, which is included within Debt extinguishment and commitment costs on our consolidated statement of operations for the year ended December 31, 2017.

Term Loan

On July 11, 2014, we and certain subsidiaries entered into a Delayed Draw Term Loan and Bridge Loan Credit Agreement (“Credit Agreement”), amending and restating a previous borrowing arrangement with the lenders, to provide us with a term loan of up to $50.0 million (“Term Loan”) and a bridge loan of up to $75.0 million (“Bridge Loan”). The lenders under the Credit Agreement include ZCOF Par Petroleum Holdings, LLC, one of our significant stockholders. Proceeds from the Term Loan were used to fund a deposit for the acquisition of Mid Pac, which was subsequently dissolved and whose assets are now owned by PHL, to pay transaction costs, and for working capital and general corporate purposes.

On June 15, 2016, the Credit Agreement was amended to permit (i) the issuance of the 5.00% Convertible Senior Notes, (ii) the issuance of our 2.50% convertible subordinated bridge notes (the “Bridge Notes”), and (iii) the WRC Acquisition. We paid a consent fee of $2.5 million in connection with this amendment, $1.3 million of which was paid to an affiliate of Whitebox Advisors, LLC (“Whitebox”), previously one of our largest stockholders. On June 21, 2016, we repaid $5 million of the Term Loan pursuant to the terms of the amendment, $3.3 million of which was allocated to an affiliate of Whitebox. Please read Note 22—Related Party Transactions for additional information.

The Term Loan originally matured on July 11, 2018 and bore interest at either 10% per annum if paid in cash or 12% per annum if paid in kind, at our election, and had an original issue discount of 5%.

On June 30, 2017, we fully repaid the Term Loan and terminated the Credit Agreement. A portion of the proceeds from the J. Aron Forward Sale and cash flows from operations were used to repay the full amount outstanding. We recorded Debt extinguishment and commitment costs of approximately $1.8 million related to unamortized deferred financing costs associated with the Term Loan in the year ended December 31, 2017.

Cross Default Provisions

Included within each of our debt agreements are affirmative and negative covenants and customary cross default provisions that require the repayment of amounts outstanding on demand unless the triggering payment default or acceleration is remedied, rescinded, or waived. As of December 31, 2019, we were in compliance with all of our debt instruments.

Guarantors

In connection with our shelf registration statement on Form S-3, which was filed with the Securities and Exchange Commission ("SEC") on February 6, 2019 and declared effective on February 15, 2019 ("Registration Statement"), we may sell non-convertible debt securities and other securities in one or more offerings with an aggregate initial offering price of up to $750.0 million. Any non-convertible debt securities issued under the Registration Statement may be fully and unconditionally guaranteed (except for customary release provisions), on a joint and several basis, by some or all of our subsidiaries, other than subsidiaries that are "minor" within the meaning of Rule 3-10 of Regulation S-X (the "Guarantor Subsidiaries"). We have no "independent assets or operations" within the meaning of Rule 3-10 of Regulation S-X and certain of the Guarantor Subsidiaries may be subject to restrictions on their ability to distribute funds to us, whether by cash dividends, loans, or advances.

Note 13—Derivatives

Commodity Derivatives

We utilize commodity derivative contracts to manage our price exposure in our inventory positions, future purchases of crude oil, future purchases and sales of refined products, and crude oil consumption in our refining process. The derivative contracts that we execute to manage our price risk include exchange traded futures, options, and OTC swaps. Our futures, options, and OTC swaps are marked-to-market and changes in the fair value of these contracts are recognized within Cost of revenues (excluding depreciation) on our consolidated statements of operations.

We are obligated to repurchase the crude oil and refined products from J. Aron at the termination of the Supply and Offtake Agreements. Our Washington Refinery Intermediation Agreement contains forward purchase obligations for certain volumes of crude oil and refined products that are required to be settled at market prices on a monthly basis. We have determined that these obligations under the Supply and Offtake Agreements and Washington Refinery Intermediation Agreement contain embedded derivatives. As such, we have accounted for these embedded derivatives at fair value with changes in the fair value recorded in Cost of revenues (excluding depreciation) on our consolidated statements of operations.

We have entered into forward purchase contracts for crude oil and forward purchases and sales contracts of refined products. We elect the normal purchases normal sales ("NPNS") exception for all forward contracts that meet the definition of a derivative and are not expected to net settle. Any gains and losses with respect to these forward contracts designated as NPNS are not reflected in earnings until the delivery occurs.

We elect to offset fair value amounts recognized for derivative instruments executed with the same counterparty under a master netting agreement. Our consolidated balance sheets present derivative assets and liabilities on a net basis. Please read Note 14—Fair Value Measurements for the gross fair value and net carrying value of our derivative instruments. Our cash margin that is required as collateral deposits cannot be offset against the fair value of open contracts except in the event of default.

Our open futures expire at various dates through October 2020. At December 31, 2019, our open commodity derivative contracts represented (in thousands of barrels):

Contract type	Purchases	Sales	Net
Futures	3,360	(3,100)	260
Total	3,360	(3,100)	260

At December 31, 2019, we also had option collars of 75 thousand barrels of crude oil per month that economically hedge our internally consumed fuel at our Hawaii refineries. These option collars have a weighted-average strike price ranging from a floor of $48.77 per barrel to a ceiling of $65.00 per barrel and expire in December 2020.

Interest Rate Derivatives

We are exposed to interest rate volatility in our ABL Revolver, Term Loan B Facility, Retail Property Term Loan, Supply and Offtake Agreements, and Washington Refinery Intermediation Agreement. We may utilize interest rate swaps to manage our interest rate risk. As of December 31, 2019, we had entered into an interest rate swap at an average fixed rate of 3.91% in exchange for the floating interest rate on the notional amounts due under the Retail Property Term Loan. This swap expires on April 1, 2024, the maturity date of the Retail Property Term Loan. In February 2018, we terminated a separate $100 million floating interest rate swap originally maturing in March 2021, which resulted in a realized gain of $3.7 million for the year ended December 31, 2018.

In June 2016, we completed the issuance and sale of an aggregate of $115.0 million principal amount of the 5.00% Convertible Senior Notes. Please read Note 12—Debt for further discussion. Upon redemption of our 5.00% Convertible Senior Notes on or after June 20, 2019 at our election, we are obligated to pay a make-whole premium equal to the present value of the remaining scheduled payments of interest on the 5.00% Convertible Senior Notes to be redeemed from the relevant redemption date to the maturity date of June 15, 2021. We have determined that the redemption option and the related make-whole premium represent an embedded derivative that is not clearly and closely related to the 5.00% Convertible Senior Notes. As such, we have accounted for this embedded derivative at fair value with changes in the fair value recorded in Interest expense and financing costs, net on our consolidated statements of operations. As of December 31, 2019, this embedded derivative was deemed to have a *de minimis* fair value.

The following table provides information on the fair value amounts (in thousands) of these derivatives as of December 31, 2019 and 2018 and their placement within our consolidated balance sheets.

		December 31,	
	Balance Sheet Location	**2019**	**2018**
		Asset (Liability)	
Commodity derivatives (1)	Prepaid and other current assets	$ 2,075	$ 4,973
Commodity derivatives	Other accrued liabilities	(5,534)	(700)
J. Aron repurchase obligation derivative	Obligations under inventory financing agreements	173	4,085
MLC terminal obligation derivative	Obligations under inventory financing agreements	(14,717)	—
Interest rate derivatives	Prepaid and other current assets	—	191
Interest rate derivatives	Other accrued liabilities	(314)	—
Interest rate derivatives	Other liabilities	(1,113)	—

(1) Does not include cash collateral of $10.3 million and $2.7 million recorded in Prepaid and other current assets and $9.5 million and $8.3 million in Other long-term assets as of December 31, 2019 and 2018, respectively.

The following table summarizes the pre-tax gains (losses) recognized in Net income (loss) on our consolidated statements of operations resulting from changes in fair value of derivative instruments not designated as hedges charged directly to earnings (in thousands):

		Year Ended December 31,		
	Statement of Operations Classification	**2019**	**2018**	**2017**
Commodity derivatives	Cost of revenues (excluding depreciation)	$ (1,547)	$ (3,420)	$ (4,517)
J. Aron repurchase obligation derivative	Cost of revenues (excluding depreciation)	(3,912)	23,649	436
MLC terminal obligation derivative	Cost of revenues (excluding depreciation)	(19,326)	—	—
Interest rate derivatives	Interest expense and financing costs, net	(1,506)	1,309	489

Note 14—Fair Value Measurements

Assets and Liabilities Measured at Fair Value on a Nonrecurring Basis

Purchase Price Allocation of U.S. Oil

The fair values of the assets acquired and liabilities assumed as a result of the Washington Acquisition were estimated as of January 11, 2019, the date of the acquisition, using valuation techniques described in notes (1) through (6) below.

	Fair Value	Valuation Technique
	(in thousands)	
Net working capital excluding operating leases	$ (35,854)	(1)
Property, plant, and equipment	412,766	(2)
Operating lease assets	62,337	(3)
Goodwill	42,522	(4)
Current operating lease liabilities	(21,571)	(3)
Long-term operating lease liabilities	(40,766)	(3)
Deferred tax liability	(92,103)	(5)
Other non-current liabilities	(804)	(6)
Total	$ 326,527	

(1) Current assets acquired and liabilities assumed were recorded at their net realizable value.

(2) The fair value of personal property was estimated using the cost approach. Key assumptions in the cost approach include determining the replacement cost by evaluating recent purchases of comparable assets or published data, and adjusting replacement cost for economic and functional obsolescence, location, normal useful lives, and capacity (if applicable). The fair value of real property was estimated using the market approach. Key assumptions in the market approach include determining the asset value by evaluating recent purchases of comparable assets under similar circumstances.

(3) Operating lease assets and liabilities were recognized based on the present value of lease payments over the lease term using the incremental borrowing rate at acquisition of 9.6%.

(4) The excess of the purchase price paid over the fair value of the identifiable assets acquired and liabilities assumed is allocated to goodwill.

(5) The deferred tax liability was determined based on the differences between the tax bases of the assets acquired and the values of those assets recorded on our consolidated balance sheets as of the date of acquisition.

(6) Other non-current liabilities are related to pension plan obligations. The underfunded status of the defined benefit plan represents the difference between the fair value of the plan's assets and the projected benefit obligations.

Purchase Price Allocation of Northwest Retail

The fair values of the assets acquired and liabilities assumed as a result of the Northwest Retail Acquisition were estimated as of March 23, 2018, the date of the acquisition, using valuation techniques described in notes (1) through (5) below.

	Fair Value	Valuation Technique
	(in thousands)	
Net working capital	$ 3,822	(1)
Property, plant, and equipment	30,230	(2)
Goodwill	46,210	(3)
Long-term capital lease obligations	(5,244)	(4)
Other non-current liabilities	(487)	(5)
Total	$ 74,531	

(1) Current assets acquired and liabilities assumed were recorded at their net realizable value.

(2) The fair value of property, plant, and equipment was estimated using the cost approach. Under the cost approach, the total replacement cost of the property is determined based on industry sources with adjustments for regional factors. The total cost is then adjusted for depreciation based on the physical age of the assets and obsolescence. The fair value of the land was estimated using the sales comparison approach. Under this approach, the sales prices of similar properties are adjusted to account for differences in land characteristics. We consider this to be a Level 3 fair value measurement. The fair value of capital lease assets was estimated using the income approach. Under the income approach, the annual lease market rental rate cash flow stream is estimated and then discounted to present value over the remaining life of the lease using a pre-tax discount rate based on expected return for the specific asset type and location.

(3) The excess of the purchase price paid over the fair value of the identifiable assets acquired and liabilities assumed is allocated to goodwill.

(4) Long-term capital lease obligations were estimated based on the present value of lease payments over the term of the lease.

(5) Other non-current liabilities are primarily related to asset retirement obligations. AROs are calculated based on the present value of the estimated removal and other closure costs using our credit-adjusted risk-free rate.

Investment in Laramie Energy

At September 30, 2019, we conducted an impairment evaluation of our investment in Laramie Energy because of the significant decline in natural gas prices over the second quarter of 2019 and continued deterioration in the third quarter of 2019. We evaluate equity method investments for impairment when factors indicate that a decrease in the value of our investment has occurred and the carrying amount of our investment may not be recoverable. An impairment loss, based on the difference between the carrying value and the estimated fair value of the investment, is recognized in earnings when an impairment is deemed to be other than temporary. At September 30, 2019, we determined that the estimated fair value of our investment in Laramie Energy was $51.8 million, compared to a carrying value of $133.3 million. The fair value estimate was determined using a discounted cash flow analysis based on natural gas forward strip prices as of September 30, 2019 for two years through December 31, 2021. A blend of 2021 forward strip pricing and third-party analyst pricing was used for years after 2021 through December 31, 2028. Other significant inputs used in the discounted cash flow analysis included proved and unproved reserves information, forecasts of operating expenditures, and the applicable discount rate. As part of our evaluation, we considered the likelihood that Colorado Interstate Gas (“CIG”) prices, which have declined from an average spot price of $2.48 ($/MMBtu) in the first quarter of 2019, to $1.84 ($/MMBtu) in the second quarter of 2019 and $1.77 ($/MMBtu) in the third quarter of 2019, will recover in the near term. As a result, we recorded an impairment charge of $81.5 million on our statement of operations for the year ended December 31, 2019. We consider this to be a Level 3 fair value measurement.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

Common stock warrants

As of December 31, 2019 and 2018, we had 354,350 common stock warrants outstanding. We estimate the fair value of our outstanding common stock warrants using the difference between the strike price of the warrant and the market price of our common stock, which is a Level 3 fair value measurement. As of December 31, 2019 and 2018, the warrants had a weighted-average exercise price of $0.09 and $0.09 and a remaining term of 2.67 years and 3.67 years, respectively.

The estimated fair value of the common stock warrants was $23.16 and $14.13 per share as of December 31, 2019 and 2018, respectively. Increases in the value of our common stock will increase the value of the common stock warrants. Likewise, decreases in the value of our common stock will result in a decrease in the value of the common stock warrants.

Derivative instruments

We utilize commodity derivative contracts to manage our price exposure to our inventory positions, future purchases of crude oil, future purchases and sales of refined products, and cost of crude oil consumed in the refining process. We may utilize interest rate swaps to manage our interest rate risk.

We are obligated to repurchase the crude oil and refined products from J. Aron at the termination of the Supply and Offtake Agreements. Our Washington Refinery Intermediation Agreement contains forward purchase obligations for certain volumes of crude oil and refined products that are required to be settled at market prices on a monthly basis. We have determined that these obligations contain embedded derivatives, similar to forward purchase contracts of crude oil and refined products. As such, we have accounted for these embedded derivatives at fair value with changes in the fair value recorded in Cost of revenues (excluding depreciation) on our consolidated statements of operations.

Upon redemption of our 5.00% Convertible Senior Notes on or after June 20, 2019 at our election, we are obligated to pay a make-whole premium equal to the present value of the remaining scheduled payments of interest on the 5.00% Convertible Senior Notes to be redeemed from the relevant redemption date to the maturity date of June 15, 2021. We have determined that the redemption option and the related make-whole premium represent an embedded derivative that is not clearly and closely related to the 5.00% Convertible Senior Notes. As of December 31, 2019 and 2018, this embedded derivative was deemed to have a *de minimis* fair value.

We classify financial assets and liabilities according to the fair value hierarchy. Financial assets and liabilities classified as Level 1 instruments are valued using quoted prices in active markets for identical assets and liabilities. These include our exchange traded futures. Level 2 instruments are valued using quoted prices for similar assets and liabilities in active markets and inputs other than quoted prices that are observable for the asset or liability. Our Level 2 instruments include OTC swaps and options. These derivatives are valued using market quotations from independent price reporting agencies and commodity exchange price curves that are corroborated with market data. Level 3 instruments are valued using significant unobservable inputs that are not supported by sufficient market activity. The valuation of our J. Aron repurchase and MLC terminal obligations embedded derivatives requires that we make estimates of the prices and differentials assuming settlement at the end of the reporting period. Estimates of the J. Aron and MLC settlement prices are based on observable inputs, such as Brent and WTI indices, and unobservable inputs, such as contractual price differentials as defined in the Supply and Offtake Agreements and Washington Refinery Intermediation Agreement; therefore they are classified as Level 3 instruments. We do not have other commodity derivatives classified as Level 3 at December 31, 2019 or 2018. Please read Note 13—Derivatives for further information on derivatives.

Financial Statement Impact

Fair value amounts by hierarchy level as of December 31, 2019 and 2018 are presented gross in the tables below (in thousands):

	December 31, 2019					
	Level 1	Level 2	Level 3	Gross Fair Value	Effect of Counter-party Netting	Net Carrying Value on Balance Sheet (1)
Assets						
Commodity derivatives	$ 4,595	$ 2,075	$ —	$ 6,670	$ (4,595)	$ 2,075
Liabilities						
Common stock warrants	$ —	$ —	$ (8,206)	$ (8,206)	$ —	$ (8,206)
Commodity derivatives	(10,129)	—	—	(10,129)	4,595	(5,534)
J. Aron repurchase obligation derivative	—	—	173	173	—	173
MLC terminal obligation derivative	—	—	(14,717)	(14,717)	—	(14,717)
Interest rate derivatives	—	(1,427)	—	(1,427)	—	(1,427)
Total	$ (10,129)	$ (1,427)	$ (22,750)	$ (34,306)	$ 4,595	$ (29,711)

	December 31, 2018					
	Level 1	Level 2	Level 3	Gross Fair Value	Effect of Counter-party Netting	Net Carrying Value on Balance Sheet (1)
Assets						
Commodity derivatives	$ 170	$ 5,234	$ —	$ 5,404	$ (431)	$ 4,973
Interest rate derivatives	—	191	—	191	—	191
Total	$ 170	$ 5,425	$ —	$ 5,595	$ (431)	$ 5,164
Liabilities						
Common stock warrants	$ —	$ —	$ (5,007)	$ (5,007)	$ —	$ (5,007)
Commodity derivatives	(870)	(261)	—	(1,131)	431	(700)
J.Aron repurchase obligation derivative	—	—	4,085	4,085	—	4,085
Total	$ (870)	$ (261)	$ (922)	$ (2,053)	$ 431	$ (1,622)

(1) Does not include cash collateral of $19.8 million and $10.9 million as of December 31, 2019 and 2018, respectively, included within Prepaid and other current assets and Other long-term assets on our consolidated balance sheets.

A roll forward of Level 3 derivative instruments measured at fair value on a recurring basis is as follows (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Balance, beginning of period	$ (922)	$ (26,372)	$ (25,134)
Settlements	13,263	—	—
Acquired	(8,654)	—	—
Unrealized and realized income (loss) included in earnings	(26,437)	25,450	(1,238)
Balance, end of period	$ (22,750)	$ (922)	$ (26,372)

The carrying value and fair value of long-term debt and other financial instruments as of December 31, 2019 and 2018 are as follows (in thousands):

	December 31, 2019	
	Carrying Value	Fair Value
5.00% Convertible Senior Notes due 2021 (1) (3)	$ 44,783	$ 66,477
7.75% Senior Secured Notes due 2025 (1)	292,015	309,375
Mid Pac Term Loan (2)	1,433	1,433
Term Loan B Facility (1)	230,474	240,625
Retail Property Term Loan (2)	43,226	43,226
Common stock warrants (2)	8,206	8,206

	December 31, 2018	
	Carrying Value	Fair Value
5.00% Convertible Senior Notes due 2021 (1) (3)	$ 100,411	$ 121,488
7.75% Senior Secured Notes due 2025 (1)	290,763	270,000
Mid Pac Term Loan (2)	1,466	1,466
Common stock warrants (2)	5,007	5,007

(1) The fair value measurements of the 5.00% Convertible Senior Notes, 7.75% Senior Secured Notes, and Term Loan B Facility are considered Level 2 measurements in the fair value hierarchy as discussed below.

(2) The fair value measurements of the common stock warrants, Mid Pac Term Loan, and Retail Property Term Loan are considered Level 3 measurements in the fair value hierarchy.

(3) The carrying value of the 5.00% Convertible Senior Notes excludes the fair value of the equity component, which was classified as equity upon issuance.

The fair value of the 5.00% Convertible Senior Notes was determined by aggregating the fair value of the liability and equity components of the notes. The fair value of the liability component of the 5.00% Convertible Senior Notes was determined using a discounted cash flow analysis in which the projected interest and principal payments were discounted at an estimated market yield for a similar debt instrument without the conversion feature. The equity component was estimated based on the Black-Scholes model for a call option with strike price equal to the conversion price, a term matching the remaining life of the 5.00% Convertible Senior Notes, and an implied volatility based on market values of options outstanding as of December 31, 2019. The fair value of the 5.00% Convertible Senior Notes is considered a Level 2 measurement in the fair value hierarchy.

The fair value of the 7.75% Senior Secured Notes and the Term Loan B Facility were determined using a market approach based on quoted prices. The inputs used to measure the fair value are classified as Level 2 inputs within the fair value hierarchy because the 7.75% Senior Secured Notes and the Term Loan B Facility may not be actively traded.

The Retail Property Term Loan is subject to a market-based floating interest rate. The Mid Pac Term Loan is subject to a fixed interest rate that approximates the long-term treasury rate. The carrying values of our Retail Property and Mid Pac Term Loans were determined to approximate fair value as of December 31, 2019. The fair value of all non-derivative financial instruments recorded in current assets, including cash and cash equivalents, restricted cash, and trade accounts receivable, and current liabilities, including accounts payable, approximate their carrying value due to their short-term nature.

Note 15—Leases

We have cancelable and non-cancelable finance and operating lease liabilities for the lease of land, vehicles, office space, retail facilities, and other facilities used in the storage and transportation of crude oil and refined products. Most of our leases include one or more options to renew, with renewal terms that can extend the lease term from one to 30 years or more. There are no material lease arrangements where we are the lessor and no material residual value guarantees associated with any of our leases.

The following table provides information on the amounts (in thousands, except lease term and discount rates) of our leased assets and liabilities as of December 31, 2019 and their placement within our consolidated balance sheets:

Lease type	Balance Sheet Location	December 31, 2019
Assets		
Finance	Property, plant, and equipment	$ 11,552
Finance	Accumulated amortization	(4,447)
Finance	Property, plant, and equipment, net	$ 7,105
Operating	Operating lease assets	420,073
Total leased assets		$ 427,178
Liabilities		
Current		
Finance	Other accrued liabilities	$ 1,784
Operating	Operating lease liabilities	79,999
Long-term		
Finance	Finance lease liabilities	6,227
Operating	Operating lease liabilities	340,909
Total lease liabilities		$ 428,919
Weighted-average remaining lease term (in years)		
Finance		5.69
Operating		10.26
Weighted-average discount rate		
Finance		6.68%
Operating		7.88%

The following table summarizes the lease costs recognized on our consolidated statement of operations (in thousands):

Lease cost type	Year Ended December 31, 2019
Finance lease cost	
Amortization of finance lease assets	$ 1,896
Interest on lease liabilities	521
Operating lease cost	100,384
Variable lease cost	11,663
Short-term lease cost	1,874
Net lease cost	$ 116,338

The following table summarizes the supplemental cash flow information related to leases as follows (in thousands):

Lease type	Year Ended December 31, 2019
Cash paid for amounts included in the measurement of liabilities	
Financing cash flows from finance leases	$ 2,167
Operating cash flows from finance leases	507
Operating cash flows from operating leases	99,713
Non-cash supplemental amounts	
ROU assets obtained in exchange for new finance lease liabilities	963
ROU assets obtained in exchange for new operating lease liabilities	79,382

The table below includes the estimated future undiscounted cash flows for finance and operating leases as of December 31, 2019 (in thousands):

For the year ending December 31,	Finance leases	Operating leases	Total
2020	$ 2,247	$ 109,727	$ 111,974
2021	1,593	69,091	70,684
2022	1,376	66,859	68,235
2023	1,345	53,088	54,433
2024	1,058	43,337	44,395
Thereafter	2,004	240,988	242,992
Total lease payments	9,623	583,090	592,713
Less amount representing interest	(1,612)	(162,182)	(163,794)
Present value of lease liabilities	$ 8,011	$ 420,908	$ 428,919

Additionally, we have $9.0 million and $1.2 million in future undiscounted cash flows for three operating leases and three finance leases, respectively, that have not yet commenced. These leases are expected to commence when the lessor has made the equipment or location available to us to operate or begin construction, respectively.

Due to the transition method elected, information presented prior to January 1, 2019 has not been restated for ASC 842 and continues to be reported under the accounting standards in effect for the period. As of December 31, 2018, we had capital lease obligations related primarily to the leases of 17 retail stations. Most capital leases included one or more options to renew, with renewal terms that could extend the lease term from one to 15 years or more. Certain leases included escalation clauses and/or purchase options. Additionally, as of December 31, 2018, we had various cancelable and noncancelable operating leases related to land, vehicles, office and retail facilities, railcars, barges, and other facilities used in the storage, transportation, and sale of crude oil and refined products. We had operating leases for most of our retail stations with an average of eight years remaining and generally contained renewal options and escalation clauses. Leases for facilities used in the storage, transportation, and sale of crude oil and refined products had various expiration dates extending to 2044. Rent expense for the years ended December 31, 2018 and 2017 was approximately $41.6 million and $41.2 million, respectively.

At December 31, 2018, the estimated minimum lease payments for capital and operating leases with initial or remaining non-cancelable lease terms in excess of one year were as follows (in thousands):

	Capital leases	Operating leases
2019	$ 2,723	$ 62,589
2020	2,264	62,132
2021	1,757	39,821
2022	1,512	38,402
2023	1,148	38,827
Thereafter	2,600	191,717
Total minimum rental payments	$ 12,004	$ 433,488
Less amount representing interest	(1,865)	
Present value of minimum rental payments	$ 10,139	

Note 16—Commitments and Contingencies

In the ordinary course of business, we are a party to various lawsuits and other contingent matters. We establish accruals for specific legal matters when we determine that the likelihood of an unfavorable outcome is probable and the loss is reasonably estimable. It is possible that an unfavorable outcome of one or more of these lawsuits or other contingencies could have a material impact on our financial condition, results of operations, or cash flows.

Tesoro Earn-out Dispute

On June 17, 2013, a wholly owned subsidiary of Par entered into a membership interest purchase agreement with Andeavor, formerly known as Tesoro Corporation (“Tesoro,” which changed its name to Andeavor Corporation before being purchased by Marathon Petroleum Company in October 2018), pursuant to which it purchased all of the issued and outstanding membership interests in Tesoro Hawaii, LLC, an entity that was renamed Hawaii Independent Energy, LLC, and thereafter renamed Par Hawaii Refining, LLC (“PHR”). The cash consideration for the acquisition was subject to an earn-out provision during the years 2014-2016, subject to, among other things, an annual earn-out cap of $20 million and an overall cap of $40 million. During 2016, we paid Tesoro a total of $16.8 million to settle the 2014 and 2015 earn-out periods. Tesoro disputed our calculation of the 2015 and 2016 earn-out amounts and asserted that it was entitled to an additional earn-out amount of $4.3 million for the 2015 earn-out period and a total earn-out amount of $8.3 million for the 2016 earn-out period. On March 22, 2018, Tesoro agreed to settle the earn-out dispute and release and discharge any related claims in exchange for our payment of $10.5 million.

United Steelworkers Union Dispute

A portion of our employees at the Par East refinery are represented by the United Steelworkers Union (“USW”). On March 23, 2015, the union ratified a four-year extension of the collective bargaining agreement. On January 13, 2016, the USW filed a claim against PHR before the United States National Labor Relations Board (the “NLRB”) alleging a refusal to bargain collectively and in good faith. On March 29, 2016, the NLRB deferred final determination on the USW charge to the grievance/arbitration process under the extant collective bargaining agreement. Arbitration was commenced and concluded on October 1, 2018, with the arbitrator taking the matter under advisement thereafter. In a decision dated November 27, 2018, the arbitrator denied the grievance without prejudice to USW’s NLRB claim regarding retiree medical and short term disability benefits. On June 5, 2019, the NLRB approved the withdrawal of USW’s claim against PHR.

Environmental Matters

Like other petroleum refiners, our operations are subject to extensive and periodically-changing federal, state, and local environmental laws and regulations governing air emissions, wastewater discharges, and solid and hazardous waste management activities. Many of these regulations are becoming increasingly stringent and the cost of compliance can be expected to increase over time.

Periodically, we receive communications from various federal, state, and local governmental authorities asserting violations of environmental laws and/or regulations. These governmental entities may also propose or assess fines or require corrective actions for these asserted violations. We intend to respond in a timely manner to all such communications and to take appropriate corrective action. Except as disclosed below, we do not anticipate that any such matters currently asserted will have a material impact on our financial condition, results of operations, or cash flows.

The Par East refinery, our Wyoming refinery, and our Washington refinery, acquired in January 2019, were all granted small refinery status by the U.S. Environmental Protection Agency ("EPA") for 2018. Owing to the receipt of these small refinery exemptions, our net income for the year ended December 31, 2019 includes $5.3 million of net RINs benefit.

Wyoming Refinery

Our Wyoming refinery is subject to a number of consent decrees, orders, and settlement agreements involving the EPA and/or the Wyoming Department of Environmental Quality, some of which date back to the late 1970s and several of which remain in effect, requiring further actions at the Wyoming refinery. The largest cost component arising from these various decrees relates to the investigation, monitoring, and remediation of soil, groundwater, surface water and sediment contamination associated with the facility's historic operations. Investigative work by Hermes Consolidated LLC, and its wholly owned subsidiary, Wyoming Pipeline Company (collectively, "WRC" or "Wyoming Refining") and negotiations with the relevant agencies as to remedial approaches remain ongoing on a number of aspects of the contamination, meaning that investigation, monitoring, and remediation costs are not reasonably estimable for some elements of these efforts. As of December 31, 2019, we have accrued $16.5 million for the well-understood components of these efforts based on current information, approximately one-third of which we expect to incur in the next five years and the remainder to be incurred over approximately 30 years.

Additionally, we believe the Wyoming refinery will need to modify or close a series of wastewater impoundments in the next several years and replace those impoundments with a new wastewater treatment system. Based on current information, reasonable estimates we have received suggest costs of approximately $11.6 million to design and construct a new wastewater treatment system.

Finally, among the various historic consent decrees, orders, and settlement agreements into which Wyoming Refining has entered, there are several penalty orders associated with exceedances of permitted limits by the Wyoming refinery's wastewater discharges. Although the frequency of these exceedances has declined over time, Wyoming Refining may become subject to new penalty enforcement action in the next several years, which could involve penalties in excess of $100,000.

Regulation of Greenhouse Gases

The EPA regulates greenhouse gases ("GHG") under the federal Clean Air Act ("CAA"). New construction or material expansions that meet certain GHG emissions thresholds will likely require that, among other things, a GHG permit be issued in accordance with the federal CAA regulations and we will be required, in connection with such permitting, to undertake a technology review to determine appropriate controls to be implemented with the project in order to reduce GHG emissions.

Furthermore, the EPA is currently developing refinery-specific GHG regulations and performance standards that are expected to impose GHG emission limits and/or technology requirements. These control requirements may affect a wide range of refinery operations. Any such controls could result in material increased compliance costs, additional operating restrictions for our business, and an increase in the cost of the products we produce, which could have a material adverse effect on our financial condition, results of operations, or cash flows.

Additionally, the EPA's final rule updating standards that control toxic air emissions from petroleum refineries imposed additional controls and monitoring requirements on flaring operations, storage tanks, sulfur recovery units, delayed coking units and required fenceline monitoring. Compliance with this rule has not had a material impact on our financial condition, results of operations, or cash flows to date.

In 2007, the State of Hawaii passed Act 234, which required that GHG emissions be rolled back on a statewide basis to 1990 levels by the year 2020. In June of 2014, the Hawaii Department of Health ("DOH") adopted regulations that require each major facility to reduce CO_2 emissions by 16% by 2020 relative to a calendar year 2010 baseline (the first year in which GHG emissions were reported to the EPA under 40 CFR Part 98). The Hawaii refineries' capacity to materially reduce fuel use and GHG emissions is limited because most energy conservation measures have already been implemented over the past 20 years. The regulation allows for "partnering" with other facilities (principally power plants) that have already dramatically reduced greenhouse emissions or are on schedule to reduce CO_2 emissions in order to comply independently with the state's Renewable Portfolio Standards. The DOH's GHG regulation allows, and the Hawaii refineries submitted, a GHG reduction plan which includes an assessment of alternatives which demonstrates that additional reductions are not cost-effective or necessary because the State of Hawaii has already reached the 1990 levels according to a report prepared by the DOH in January 2019.

In 2007, the U.S. Congress passed the Energy Independence and Security Act of 2007 (the "EISA") which, among other things, set a target fuel economy standard of 35 miles per gallon for the combined fleet of cars and light trucks in the U.S. by model year 2020 and contained an expanded Renewable Fuel Standard (the "RFS"). In August 2012, the EPA and National Highway Traffic Safety Administration ("NHTSA") jointly adopted regulations that establish an average industry fuel economy of 54.5

miles per gallon by model year 2025. On August 8, 2018, the EPA and NHTSA jointly proposed to revise existing fuel economy standards for model years 2021-2025 and to set standards for 2026 for the first time. The agencies have not yet issued a final rule. Although the revised fuel economy standards are expected to be less stringent than the initial standards for model years 2021-2025, it is uncertain whether the revised standards will increase year over year. Higher fuel economy standards have the potential to reduce demand for our refined transportation fuel products.

Under EISA, the RFS requires an increasing amount of renewable fuel to be blended into the nation's transportation fuel supply, up to 36 billion gallons by 2022. In the near term, the RFS will be satisfied primarily with fuel ethanol blended into gasoline. We, and other refiners subject to the RFS, may meet the RFS requirements by blending the necessary volumes of renewable fuels produced by us or purchased from third parties. To the extent that refiners will not or cannot blend renewable fuels into the products they produce in the quantities required to satisfy their obligations under the RFS program, those refiners must purchase renewable credits, referred to as RINs, to maintain compliance. To the extent that we exceed the minimum volumetric requirements for blending of renewable fuels, we have the option of retaining these RINs for current or future RFS compliance or selling those RINs on the open market. The RFS may present production and logistics challenges for both the renewable fuels and petroleum refining and marketing industries in that we may have to enter into arrangements with other parties or purchase D3 waivers from the EPA to meet our obligations to use advanced biofuels, including biomass-based diesel and cellulosic biofuel, with potentially uncertain supplies of these new fuels.

In October 2010, the EPA issued a partial waiver decision under the federal CAA to allow for an increase in the amount of ethanol permitted to be blended into gasoline from 10% ("E10") to 15% ("E15") for 2007 and newer light duty motor vehicles. In 2019, the EPA approved year-round sales of E15. There are numerous issues, including state and federal regulatory issues, that need to be addressed before E15 can be marketed on a large scale for use in traditional gasoline engines; however, increased renewable fuel in the nation's transportation fuel supply could reduce demand for our refined products.

In March 2014, the EPA published a final Tier 3 gasoline standard that requires, among other things, that gasoline contain no more than 10 parts per million ("ppm") sulfur on an annual average basis and no more than 80 ppm sulfur on a per-gallon basis. The standard also lowers the allowable benzene, aromatics, and olefins content of gasoline. The effective date for the new standard is January 1, 2017, however, approved small volume refineries had until January 1, 2020 to meet the standard. The Par East refinery was required to comply with Tier 3 gasoline standards within 30 months of June 21, 2016, the date it was disqualified from small volume refinery status. On March 19, 2015, the EPA confirmed the small refinery status of our Wyoming refinery. The Par East refinery, our Wyoming refinery, and our Washington refinery, acquired in January 2019, were all granted small refinery status by the EPA for 2018. As of January 1, 2020, all four of our refineries were compliant with the final Tier 3 gasoline standard.

Beginning on June 30, 2014, new sulfur standards for fuel oil used by marine vessels operating within 200 miles of the U.S. coastline (which includes the entire Hawaiian Island chain) was lowered from 10,000 ppm (1%) to 1,000 ppm (0.1%). The sulfur standards began at the Hawaii refineries and were phased in so that by January 1, 2015, they were to be fully aligned with the International Marine Organization ("IMO") standards and deadline. The more stringent standards apply universally to both U.S. and foreign-flagged ships. Although the marine fuel regulations provided vessel operators with a few compliance options such as installation of on-board pollution controls and demonstration unavailability, many vessel operators will be forced to switch to a distillate fuel while operating within the Emission Control Area ("ECA"). Beyond the 200 mile ECA, large ocean vessels are still allowed to burn marine fuel with up to 3.5% sulfur. Our Hawaii refineries are capable of producing the 1% sulfur residual fuel oil that was previously required within the ECA. Although our Hawaii refineries remain in a position to supply vessels traveling to and through Hawaii, the market for 0.1% sulfur distillate fuel and 3.5% sulfur residual fuel is much more competitive.

In addition to U.S. fuels requirements, the IMO has also adopted newer standards that further reduce the global limit on sulfur content in maritime fuels to 0.5% beginning in 2020 ("IMO 2020"). Like the rest of the refining industry, we are focused on meeting these standards and may incur costs in producing lower-sulfur fuels.

There will be compliance costs and uncertainties regarding how we will comply with the various requirements contained in the EISA, RFS, IMO 2020, and other fuel-related regulations. We may experience a decrease in demand for refined petroleum products due to an increase in combined fleet mileage or due to refined petroleum products being replaced by renewable fuels.

Environmental Agreement

On September 25, 2013, Par Petroleum, LLC (formerly Hawaii Pacific Energy, a wholly owned subsidiary of Par created for purposes of the PHR acquisition), Tesoro, and PHR entered into an Environmental Agreement ("Environmental Agreement") that allocated responsibility for known and contingent environmental liabilities related to the acquisition of PHR, including the Consent Decree as described below.

Consent Decree

On July 18, 2016, PHR and subsidiaries of Tesoro entered into a consent decree with the EPA, the U.S. Department of Justice ("DOJ"), and other state governmental authorities concerning alleged violations of the federal CAA related to the ownership and operation of multiple facilities owned or formerly owned by Tesoro and its affiliates ("Consent Decree"), including the Par East refinery. As a result of the Consent Decree, PHR expanded its previously-announced 2016 Par East refinery turnaround to undertake additional capital improvements to reduce emissions of air pollutants and to provide for certain nitrogen oxide and sulfur dioxide emission controls and monitoring required by the Consent Decree.

Tesoro is responsible under the Environmental Agreement for directly paying, or reimbursing PHR, for all reasonable third-party capital expenditures incurred pursuant to the Consent Decree to the extent related to acts or omissions prior to the date of the closing of the PHR acquisition. Tesoro is obligated to pay all applicable fines and penalties related to the Consent Decree. Through December 31, 2019, Tesoro has reimbursed us for $12.2 million of our total capital expenditures incurred in connection with the Consent Decree. As of December 31, 2019, all reimbursable capital expenditures incurred pursuant to the Consent Decree were collected. Net capital expenditures and reimbursements related to the Consent Decree for the years ended December 31, 2019, 2018, and 2017 are presented within Capital expenditures on our consolidated statement of cash flows for the related periods.

Indemnification

In addition to its obligation to reimburse us for capital expenditures incurred pursuant to the Consent Decree, Tesoro agreed to indemnify us for claims and losses arising out of related breaches of Tesoro's representations, warranties, and covenants in the Environmental Agreement, certain defined "corrective actions" relating to pre-existing environmental conditions, third-party claims arising under environmental laws for personal injury or property damage arising out of or relating to releases of hazardous materials that occurred prior to the date of the closing of the PHR acquisition, any fine, penalty, or other cost assessed by a governmental authority in connection with violations of environmental laws by PHR prior to the date of the closing of the PHR acquisition, certain groundwater remediation work, fines, or penalties imposed on PHR by the Consent Decree related to acts or omissions of Tesoro prior to the date of the closing of the PHR acquisition, and claims and losses related to the Pearl City Superfund Site.

Tesoro's indemnification obligations are subject to certain limitations as set forth in the Environmental Agreement. These limitations include a deductible of $1 million and a cap of $15 million for certain of Tesoro's indemnification obligations related to certain pre-existing conditions, as well as certain restrictions regarding the time limits for submitting notice and supporting documentation for remediation actions.

Recovery Trusts

We emerged from the reorganization of Delta Petroleum Corporation ("Delta") on August 31, 2012 ("Emergence Date"), when the plan of reorganization ("Plan") was consummated. On the Emergence Date, we formed the Delta Petroleum General Recovery Trust ("General Trust"). The General Trust was formed to pursue certain litigation against third parties, including preference actions, fraudulent transfer and conveyance actions, rights of setoff and other claims, or causes of action under the U.S. Bankruptcy Code and other claims and potential claims that Delta and its subsidiaries (collectively, "Debtors") hold against third parties. On February 27, 2018, the Bankruptcy Court entered its final decree closing the Chapter 11 bankruptcy cases of Delta and the other Debtors, discharging the trustee for the General Trust, and finding that all assets of the General Trust were resolved, abandoned, or liquidated and have been distributed in accordance with the requirements of the Plan. In addition, the final decree required the Company or the General Trust, as applicable, to maintain the current accruals owed on account of the remaining claims of the U.S. Government and Noble Energy, Inc.

As of December 31, 2019, two related claims totaling approximately $22.4 million remained to be resolved by the trustee for the General Trust and we have accrued approximately $0.5 million representing the estimated value of claims remaining to be settled which are deemed probable and estimable at period end.

One of the two remaining claims was filed by the U.S. Government for approximately $22.4 million relating to ongoing litigation concerning a plugging and abandonment obligation in Pacific Outer Continental Shelf Lease OCS-P 0320, comprising part of the Sword Unit in the Santa Barbara Channel, California. The second unliquidated claim, which is related to the same plugging and abandonment obligation, was filed by Noble Energy Inc., the operator and majority interest owner of the Sword Unit. We believe the probability of issuing stock to satisfy the full claim amount is remote, as the obligations upon which such proof of claim is asserted are joint and several among all working interest owners and Delta, our predecessor, only owned an approximate 3.4% aggregate working interest in the unit.

The settlement of claims is subject to ongoing litigation and we are unable to predict with certainty how many shares will be required to satisfy all claims. Pursuant to the Plan, allowed claims are settled at a ratio of 54.4 shares per $1,000 of claim.

Major Customers

For the year ended December 31, 2017, we had one customer in our refining segment that accounted for 10% of our consolidated revenues. No other customer accounted for more than 10% of our consolidated revenues during the years ended December 31, 2019, 2018, and 2017.

Note 17—Stockholders' Equity

Common Stock

Our certificate of incorporation contains restrictions on the transfer of certain of our securities in order to preserve the net operating loss carryovers, capital loss carryovers, general business credit carryovers, alternative minimum tax credit carryovers, and foreign tax credit carryovers, as well as any "net unrealized built-in loss" within the meaning of Section 382 of the Internal Revenue Service Code, of us or any direct or indirect subsidiary thereof. These restrictions include provisions regarding approval by our Board of Directors of transfers of common stock by holders of five percent or more of the outstanding common stock. Our debt agreements restrict the payment of dividends.

Registration Rights Agreements

In connection with our emergence from bankruptcy on August 31, 2012, we entered into a registration rights agreement ("Registration Rights Agreement") providing the stockholders party thereto ("Stockholders") with certain registration rights.

The Registration Rights Agreement states that at any time after the consummation of a qualified public offering, any Stockholder or group of Stockholders that, together with its or their affiliates, holds more than fifteen percent of the Registrable Shares (as defined in the Registration Rights Agreement), will have the right to require us to file with the SEC a registration statement for a public offering of all or part of its Registrable Shares (each a "Demand Registration"), by delivery of written notice to the company (each, a "Demand Request").

Within 90 days after receiving the Demand Request, we must file with the SEC the registration statement with respect to the Demand Registration, subject to certain limitations as set forth in the Registration Rights Agreement. We are required to use commercially reasonable efforts to cause the registration statement to be declared effective as soon as practicable after such filing.

In addition, subject to certain exceptions, if we propose to register any class of common stock for sale to the public, we are required, subject to certain conditions, to include all Registrable Shares with respect to which we have received written requests for inclusion.

In connection with the closing of a private placement, we entered into an additional registration rights agreement with the purchasers of the shares. Under this registration rights agreement, we agreed to file a registration statement relating to the shares of common stock with the SEC within 60 days after the closing date of the sale which would be declared effective within 180 days of the closing date of the sale. We also agreed to use commercially reasonable efforts to keep the registration statement effective until the earliest to occur of (i) the disposition of all registrable securities, (ii) the availability under Rule 144 of the Securities Act of 1933, as amended, for each holder of registrable securities to immediately freely resell such registrable securities without volume restrictions, or (iii) the third anniversary of the effective date of the registration statement.

This registration rights agreement also provides the right for a holder or group of holders of more than $50 million of registrable securities to demand that we conduct an underwritten public offering of the registrable securities. However, the demanding holders are limited to a total of three such underwritten offerings, with no more than one demand request for an underwritten offering made in any 365 day period. Additionally, this registration rights agreement contains customary indemnification rights and obligations for both us and the holders of registrable securities.

If this registration statement does not remain effective for the applicable effectiveness period described above then from that date until cured, we must pay, as liquidated damages and not as a penalty, an amount in cash equal to 0.25% of the purchaser's allocated purchase price per calendar month, not to exceed 0.75% of the allocated purchase price.

The registration rights granted in each rights agreement are subject to customary indemnification and contribution provisions, as well as customary restrictions such as suspension periods and, if a registration is for an underwritten offering, limitations on the number of shares to be included in the underwritten offering imposed by the managing underwriter.

In connection with the completion of the Company's private unregistered offering of its 5.00% Convertible Senior Notes, the Company entered into a Registration Rights Agreement (the "Convertible Notes Registration Rights Agreement"), dated as of June 21, 2016, with the initial purchasers in the offering of the 5.00% Convertible Senior Notes. The Convertible Notes Registration Rights Agreement requires the Company (i) to file with the SEC a shelf registration statement covering resales of the shares of common stock, if any, issuable upon conversion of the 5.00% Convertible Senior Notes and in respect of any make-whole premium, (ii) to use its best efforts to cause, if not a well-known seasoned issuer, such shelf registration statement to be declared effective by the SEC within 180 days after June 21, 2016, and (iii) to use its best efforts to keep such shelf registration statement effective until the earlier of (A) the 120th calendar day immediately following the maturity date of the 5.00% Convertible Senior Notes or (B) the date on which there are no longer outstanding any 5.00% Convertible Senior Notes or restricted shares of the common stock that have been received upon conversion of the 5.00% Convertible Senior Notes or in respect of any make-whole premium.

If the Company does not fulfill its obligations under the Convertible Notes Registration Rights Agreement, it will be required to pay the holders of the 5.00% Convertible Senior Notes liquidated damages in the form of additional interest on the 5.00% Convertible Senior Notes. Such additional interest will accrue at a rate per year equal to: (i) 0.25% of the principal amount of the 5.00% Convertible Senior Notes to, and including, the 90th day following such registration default and (ii) 0.50% of the principal amount of the 5.00% Convertible Senior Notes from, and after, the 91st day following such registration default. In no event will the liquidated damages exceed 0.50% per year.

Incentive Plans

Our incentive compensation plans are described below.

Long Term Incentive Plan

On December 20, 2012, our Board of Directors ("Board") approved the Par Petroleum Corporation 2012 Long Term Incentive Plan ("Incentive Plan" or "LTIP"). Under the Incentive Plan, the Board, or a committee of the Board, may grant incentive stock options, nonstatutory stock options, restricted stock, and restricted stock units to directors and other employees or those of our subsidiaries. On February 16, 2016 and February 27, 2018, the Board approved the amendment and restatement of the Incentive Plan to increase the number of shares issuable under the Amended and Restated LTIP. The Company's shareholders ratified the amended and restated Incentive Plan on June 2, 2016 and May 8, 2018, respectively. The maximum number of shares that may be granted under the LTIP is 6.0 million shares of common stock. At December 31, 2019, 1.8 million shares were available for future grants and awards under the LTIP.

Restricted stock and restricted stock units awarded under the Incentive Plan are subject to restrictions, terms, and conditions, including forfeitures, as may be determined by the Board. During the period in which such restrictions apply, unless specifically provided otherwise in accordance with the terms of the Incentive Plan, the recipient of the restricted stock would be the record owner of the shares and have all of the rights of a stockholder with respect to the shares, including the right to vote and the right to receive dividends or other distributions made or paid with respect to the shares. The recipient of restricted stock units shall not have any of the rights of a stockholder of the Company until such units vest and convert into shares of common stock. The fair value of the restricted stock and stock units is generally determined based upon the quoted market price of our common stock on the date of grant. Restricted stock awards generally vest ratably over a four-year period. Restricted stock units do not vest ratably, rather they vest in full at the end of three years.

Stock options are issued with an exercise price equal to the fair market value of our common stock on the date of grant and are subject to such other terms and conditions as may be determined by the Board. The options generally expire eight years from the grant date, unless granted by the Board for a shorter term. Option grants generally vest ratably over a four-year period.

Stock Purchase Plan

On June 12, 2014, the Board adopted a Stock Purchase Plan (as amended, the "SPP") plan. The SPP is limited to the Company's qualifying executive officers and directors who qualify as accredited investors under Rule 501(a) of the Securities Act of 1933, as amended. The SPP provides that each participant may, subject to compliance with securities laws and other regulations and only during "window periods" as described in our insider trading policy as in effect from time to time, until the later to occur of (a) December 31, 2015 or (b) the eighteen month anniversary of the date that the participant commenced his or her employment or service with us, purchase, in a single transaction, up to $1 million of shares of our common stock ("the SPP Shares") at a per share purchase price equal to the closing price of the common stock on the date of purchase. The sale or transfer of the SPP Shares by such participant would be limited for the earlier of (i) two years from the date of purchase or (ii) the termination of the participant's service with us or any affiliates for any reason. Additionally, the SPP provides that each purchasing participant will be granted a number of shares of restricted common stock under the Incentive Plan equal to 20% of the SPP Shares purchased with 50% of the restricted common stock vesting on each of the two annual anniversaries of the date of grant. Each purchasing participant will also be granted nonstatutory stock options with a 5-year term to purchase a number of shares of common stock under the Incentive Plan (with an exercise price equal to the Fair Market Value as defined in the Incentive Plan on the date of grant) equal to certain specified percentages of the SPP Shares purchased based on a Black-Scholes model with 50% of the options vesting on each of the two annual anniversaries of the date of grant. Such percentages are as follows: 50% for a non-employee chairman of the Board, 35% for non-employee members of the Board, and 50% - 70% for executive officers.

The following table summarizes our compensation costs recognized in General and administrative expense (excluding depreciation) and Operating expense (excluding depreciation) under the Incentive Plan and Stock Purchase Plan (in thousands):

	Years Ended December 31,		
	2019	2018	2017
Restricted Stock Awards	$ 3,490	$ 3,483	$ 4,263
Restricted Stock Units	$ 1,269	$ 835	$ 502
Stock Option Awards	$ 1,454	$ 1,878	$ 2,439

Employee Stock Purchase Plan

On February 27, 2018, our Board approved the Par Pacific Holdings, Inc. 2018 Employee Stock Purchase Plan ("ESPP"). Beginning in 2019, eligible employees may elect to purchase the Company's common stock at 85% of the market price on the purchase date. Eligible employees may invest from 0% to 10% of their annual income subject to a $15 thousand annual maximum. The Board, or a committee of the Board, is authorized to set the market price discount percentages, any holding periods, and other purchasing terms and timing. The Company's shareholders ratified the ESPP on May 8, 2018. The maximum number of shares that may be issued under the ESPP is 500 thousand shares of common stock. At December 31, 2019, 432 thousand shares remained available under the ESPP.

During the year ended December 31, 2019, we recognized $0.2 million of compensation costs in General and administrative expense (excluding depreciation) and Operating expense (excluding depreciation) related to the 15% discount offered to employees under the ESPP. As of December 31, 2019, employees purchased 68 thousand shares under the ESPP.

Management Stock Purchase Plan

On February 26, 2019, our Board approved the Par Pacific Holdings, Inc. 2019 Management Stock Purchase Plan (the "MSPP"). The MSPP provides executive management with an opportunity to receive restricted stock units ("RSUs") by converting a portion of their cash bonus compensation into RSUs ("Deferred RSUs") and receiving awards of matching RSUs, the amount of which are determined by the amount of compensation converted ("Matching RSUs"). A Deferred RSU and a Matching RSU each represents a right to receive one share of the Company's common stock in the future, subject to the terms and conditions of the MSPP, including, but not limited to, vesting requirements. Shares of common stock issued pursuant to awards of Deferred RSUs and Matching RSUs will be issued from the shares reserved for issuance under the LTIP. As of December 31, 2019, no Deferred RSUs or Matching RSUs had been issued under the MSPP.

Restricted Stock Awards and Restricted Stock Units

The following table summarizes our restricted stock activity (in thousands, except per share amounts):

	Shares	Weighted-Average Grant Date Fair Value
Unvested balance at December 31, 2018	526	$ 17.29
Granted	295	17.43
Vested	(213)	17.31
Forfeited	(70)	16.64
Unvested balance at December 31, 2019	538	$ 16.95

The total fair value of restricted stock and restricted stock units that vested during the years ended December 31, 2019, 2018, and 2017 was $3.7 million, $3.3 million, and $4.0 million, respectively. The estimated weighted-average grant-date fair value per share of restricted stock and restricted stock units granted during the years ended December 31, 2019, 2018, and 2017 was $17.43, $17.47, and $15.49, respectively.

As of December 31, 2019 and 2018, there was approximately $6.3 million and $5.8 million, of total unrecognized compensation costs related to restricted stock awards and restricted stock units, which are expected to be recognized on a straight-line basis over a weighted-average period of 1.69 years and 2.46 years, respectively.

Performance Restricted Stock Units

The following table summarizes our performance restricted stock activity (in thousands, except per unit amounts):

	Units		Weighted-Average Grant Date Fair Value
Unvested balance at December 31, 2018	101	$	16.14
Granted	48		17.00
Vested	—		—
Forfeited	(3)		17.34
Unvested balance at December 31, 2019	146	$	16.33

These performance restricted stock units had a fair value of approximately $0.8 million, $0.8 million, and $0.7 million, respectively, and are subject to certain annual performance targets based on three-year-performance periods as defined by our Board of Directors. The estimated weighted-average grant-date fair value per share of performance restricted stock units granted during the years ended December 31, 2019, 2018, and 2017 was $17.00, $17.34, and $14.60, respectively.

As of December 31, 2019 and 2018, there were approximately $0.9 million and $0.9 million of total unrecognized compensation costs related to the performance restricted stock units, which are expected to be recognized on a straight-line basis over a weighted-average period of 1.74 years and 1.87 years, respectively.

Stock Option Grants

The fair value of each option is estimated on the grant date using the Black-Scholes option pricing model. The expected term represents the period of time that options are expected to be outstanding and is based upon the term of the option. The expected volatility represents the extent to which our stock price is expected to fluctuate between the grant date and the expected term of the award. We do not use an expected dividend yield in our fair value measurement as we are restricted from the payment of dividends. The risk-free rate is the implied yield available on U.S. Treasury securities with a remaining term equal to the expected term of the option at the date of grant. The weighted-average assumptions used to measure stock options granted during 2019, 2018, and 2017 are presented below.

	2019	2018	2017
Expected life from date of grant (years)	5.3	5.3	5.3
Expected volatility	34.3%	36.2%	42.0%
Risk-free interest rate	2.46%	2.50%	1.97%

The following table summarizes our stock option activity (in thousands, except per share amounts and term years):

	Number of Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term in Years	Aggregate Intrinsic Value
Outstanding balance at December 31, 2018	2,231	$ 19.27	4.8	$ —
Issued	300	17.00		
Exercised	(483)	17.78		
Forfeited / canceled	(18)	17.00		
Outstanding balance at December 31, 2019	2,030	$ 19.31	4.7	$ 7,981
Exercisable, end of year	1,275	$ 20.25	3.6	$ 3,816

The estimated weighted-average grant-date fair value per share of options granted during the year ended December 31, 2019, 2018, and 2017 was $5.98, $6.30, and $5.81, respectively.

As of December 31, 2019 and 2018, there were approximately $2.7 million and $3.4 million, respectively, of total unrecognized compensation costs related to stock option awards, that are expected to be recognized on a straight-line basis over a weighted-average period of 1.69 and 2.32 years, respectively.

Note 18—Benefit Plans

Defined Contribution Plans

We maintain defined contribution plans for our employees. All eligible employees, other than our U.S. Oil employees, may participate in our Par plan after thirty days of service. All eligible employees at U.S. Oil & Refining Co. may participate in our U.S. Oil plan following the later of date of hire or age twenty-one. For all employees participating in the Par plan and non-union employees participating in the U.S. Oil plan, we match employee contributions up to a maximum of 6% of the employee's eligible compensation, with the employer contributions vesting at 100%. For the years ended December 31, 2019, 2018, and 2017, we made contributions to the plans totaling approximately $5.6 million, $4.0 million, and $3.6 million, respectively.

Defined Benefit Plans

We maintain defined benefit pension plans (the "Benefit Plans") covering substantially all our Wyoming Refining employees and the employees of U.S. Oil covered by a collective bargaining agreement. Benefits under our Wyoming Refining plan are based on years of service and the employee's highest average compensation received during five consecutive years of the last ten years of employment. Benefits under our U.S. Oil plan are based on the employee's hourly rate of compensation at the beginning of each year of employment. Our funding policy is to contribute annually an amount equal to the pension expense, subject to the minimum funding requirements of the Employee Retirement Income Security Act of 1974 and the tax deductibility of such contributions. In December 2016, the Wyoming Refining Plan was amended (the "Plan Amendment") to freeze all future benefit accruals for salaried plan participants.

The changes in the projected benefit obligation and the fair value of plan assets of our Benefit Plans for the years ended December 31, 2019 and 2018 were as follows (in thousands):

	2019	2018
Changes in projected benefit obligation:		
Projected benefit obligation as of the beginning of the period	$ 27,539	$ 30,877
Acquired	16,831	—
Service cost	910	548
Interest cost	1,794	1,107
Actuarial (gain) loss	6,688	(2,917)
Benefits paid	(1,620)	(2,076)
Projected benefit obligation as of the end of the period	$ 52,142	$ 27,539
Changes in fair value of plan assets:		
Fair value of plan assets as of the beginning of the period	$ 20,254	$ 23,461
Acquired	16,027	—
Actual return (loss) on plan assets	6,405	(1,131)
Employer contributions	1,800	—
Benefits paid	(1,620)	(2,076)
Fair value of plan assets as of the end of the period	$ 42,866	$ 20,254

The underfunded status of our Benefit Plans is recorded within Other liabilities in our consolidated balance sheets. The reconciliation of the underfunded status of our Benefit Plans of December 31, 2019 and 2018 was as follows:

	2019	2018
Projected benefit obligation	$ 52,142	$ 27,539
Fair value of plan assets	42,866	20,254
Underfunded status	$ 9,276	$ 7,285
Gross amounts recognized in accumulated other comprehensive income: (1)		
Net actuarial gain (loss)	$ (2,622)	$ 3,494

(1) As of December 31, 2019, we had an immaterial amount of service costs recognized in accumulated other comprehensive income. As of December 31, 2019, we had $0.2 million in accumulated other comprehensive income that is expected to be amortized into net periodic benefit cost in 2020.

Weighted-average assumptions used to measure our projected benefit obligation as of December 31, 2019, 2018, and 2017 and net periodic benefit costs for the years ended December 31, 2019, 2018 and 2017 are as follows:

	2019	2018	2017
Projected benefit obligation:			
Wyoming Refining plan			
Discount rate (1)	3.30%	4.20%	3.65%
Rate of compensation increase	3.00%	3.00%	3.00%
U.S. Oil plan			
Discount rate (1)	3.10%	—%	—%
Rate of compensation increase	3.00%	—%	—%
Net periodic benefit costs:			
Wyoming Refining plan			
Discount rate (1)	4.20%	3.65%	4.20%
Expected long-term rate of return (2)	6.50%	6.50%	6.25%
Rate of compensation increase	3.00%	3.00%	4.30%
U.S. Oil plan			
Discount rate (1)	4.10%	—%	—%
Expected long-term rate of return (2)	6.00%	—%	—%
Rate of compensation increase	3.00%	—%	—%

(1) In determining the discount rate, we use yields on high-quality fixed income investments with payments matched to the estimated distributions of benefits from our plans.
(2) The expected long-term rate of return is based on a blend of historic returns of equity and debt securities.

The net periodic benefit cost for the years ended December 31, 2019, 2018, and 2017 includes the following components:

	2019	2018	2017
Components of net periodic benefit cost:			
Service cost	$ 910	$ 548	$ 614
Interest cost	1,794	1,107	1,192
Expected return on plan assets	(1,972)	(1,258)	(1,189)
Amortization of net loss	95	—	—
Amortization of prior service cost	3	—	—
Net periodic benefit cost	$ 830	$ 397	$ 617

The Service cost component of net periodic benefit cost is included in Operating expense (excluding depreciation) in our consolidated statement of operations for the years ended December 31, 2019, 2018, and 2017. The other components of net periodic benefit cost are included in Other income (expense), net in our consolidated statement of operations for the years ended December 31, 2019, 2018, and 2017.

The weighted-average asset allocation for our Wyoming Refining plan at December 31, 2019 is as follows:

	Target	Actual
Asset category:		
Equity securities	54%	56%
Debt securities	35%	32%
Real estate	11%	12%
Total	100%	100%

The weighted-average asset allocation for our U.S. Oil plan at December 31, 2019 is as follows:

	Target Range	Actual
Asset category:		
Equity securities	40 - 80%	62%
Debt securities	20 - 60%	38%
Cash and Cash Equivalents	0 - 30%	—%
Total	100%	100%

We have a long-term, risk-controlled investment approach using diversified investment options with minimal exposure to volatile investment options like derivatives. Our Benefit Plans' assets are invested in pooled separate accounts administered by the Benefit Plans' custodians. The underlying assets in the pooled separate accounts are invested in equity securities, debt securities, real estate, or cash and cash equivalents. The pooled separate accounts are valued based upon the fair market value of the underlying investments and are deemed to be Level 2.

We intend to contribute $0.5 million to the U.S. Oil plan during 2020. We do not intend to make any contributions to the Wyoming Refining plan during 2020. Based on current data and assumptions, the following benefit payments, which reflect expected future service, as appropriate, are expected to be paid over the next 10 years:

Year Ended		
2020	$	2,215
2021		2,007
2022		2,082
2023		2,203
2024		2,234
Thereafter		13,095
	$	23,836

Note 19—Income (Loss) Per Share

Basic income (loss) per share is computed by dividing net income (loss) attributable to common stockholders by the sum of the weighted-average number of common shares outstanding and the weighted-average number of shares issuable under the common stock warrants, representing 354 thousand shares for each of the years ended December 31, 2019, 2018, and 2017. The common stock warrants are included in the calculation of basic income (loss) per share because they are issuable for minimal consideration. The following table sets forth the computation of basic and diluted income per share (in thousands, except per share amounts):

	Year Ended December 31,		
	2019	2018	2017
Net Income	$ 40,809	$ 39,427	$ 72,621
Less: Undistributed income allocated to participating securities (1)	438	556	878
Net income attributable to common stockholders	40,371	38,871	71,743
Plus: Net income effect of convertible securities	—	—	—
Numerator for diluted income per common share	$ 40,371	$ 38,871	$ 71,743
Basic weighted-average common stock shares outstanding	50,352	45,726	45,543
Plus: dilutive effects of common stock equivalents	118	29	40
Diluted weighted-average common stock shares outstanding	50,470	45,755	45,583
Basic income per common share	$ 0.80	$ 0.85	$ 1.58
Diluted income per common share	$ 0.80	$ 0.85	$ 1.57

(1) Participating securities includes restricted stock that has been issued but has not yet vested.

For the year ended December 31, 2019, our calculation of diluted shares outstanding excluded 182 thousand shares of unvested restricted stock and 1.6 million stock options. For the year ended December 31, 2018, our calculation of diluted shares outstanding excluded 68 thousand shares of unvested restricted stock and 1.3 million stock options. For the year ended December 31, 2017, our calculation of diluted shares outstanding excluded 65 thousand shares of unvested restricted stock and 1.3 million stock options.

As discussed in Note 12—Debt, we have the option of settling the 5.00% Convertible Senior Notes in cash or shares of common stock, or any combination thereof, upon conversion. For the years ended December 31, 2019, 2018, and 2017, diluted income per share was determined using the if-converted method. Our calculation of diluted shares outstanding for years ended December 31, 2019, 2018, and 2017 excluded 5.1 million, 6.4 million, and 6.4 million common stock equivalents, respectively, as the effect would be anti-dilutive.

Note 20—Income Taxes

As of December 31, 2019, we had approximately $1.4 billion in net operating loss carryforwards ("NOL carryforwards"); however, we currently have a valuation allowance against this and substantially all of our other deferred tax assets. In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. For the year ended December 31, 2019, we recorded an income tax benefit of $69.7 million primarily driven by a $64.2 million benefit associated with the partial release of our valuation allowance in connection with the recognition of deferred tax liabilities acquired as part of the Washington Acquisition. Management continues to conclude that we did not meet the "more likely than not" requirement in order to recognize deferred tax assets on the remaining amounts and a valuation allowance has been recorded for substantially all of our net deferred tax assets at December 31, 2019 and 2018.

In connection with our emergence from bankruptcy on August 31, 2012, we experienced an ownership change as defined under Section 382 of the Code. Section 382 generally places a limit on the amount of NOL carryforwards and other tax attributes arising before an ownership change that may be used to offset taxable income after an ownership change. We believe that we have qualified for an exception to the general limitation rules under Code Section 382(l)(5) which provides for substantially less restrictive limitations on our NOL carryforwards. Our amended and restated certificate of incorporation places restrictions upon the ability of certain equity interest holders to transfer their ownership interest in us. These restrictions are designed to provide us with the maximum assurance that another ownership change does not occur that could adversely impact our NOL carryforwards.

We believe that any adjustment to our uncertain tax positions would not have a material impact on our financial statements given the Company's deferred tax and corresponding valuation allowance position as of December 31, 2019.

Our net taxable income must be apportioned to various states based upon the income tax laws of the states in which we derive our revenue. Our NOL carryforwards will not always be available to offset taxable income apportioned to the various states. The states from which our refining, retail, and logistics revenues are derived are not the same states in which our NOLs were incurred; therefore, we expect to incur state tax liabilities in connection with our refining, retail, and logistics operations.

The Tax Cuts and Jobs Act enacted in 2017 lowered the Federal corporate tax rate from 35% to 21% and made numerous other tax law changes. GAAP requires companies to recognize the effect of tax law changes in the period of enactment. During 2018, we recorded a benefit for the release of $0.7 million of our valuation allowance to offset future temporary differences associated with the interest expense carryforwards available under the Tax Cuts and Jobs Act. During 2017, as a result of the change in rate, we remeasured our net deferred tax assets and the associated valuation allowance by $207.7 million. In 2017, we also released $0.8 million of valuation allowance related to Alternative Minimum Tax ("AMT") credit carried forward from prior years that became refundable in connection with the Tax Cuts and Jobs Act.

We will continue to assess the realizability of our deferred tax assets based on consideration of actual operating results. If sufficient positive evidence of improving actual operating results becomes available, the amount of the deferred tax asset considered more likely than not to be recognized would be increased with a corresponding reduction in income tax expense in the period recorded.

Income tax expense (benefit) consisted of the following (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Current:			
U.S.—Federal	$ (3,203)	$ (328)	$ —
U.S.—State	400	—	2
Deferred:			
U.S.—Federal	(58,461)	426	(1,321)
U.S.—State	(8,425)	235	—
Total	$ (69,689)	$ 333	$ (1,319)

Income tax expense was different from the amounts computed by applying U.S. Federal income tax rate to pretax income as a result of the following:

	Year Ended December 31,		
	2019	2018	2017
Federal statutory rate	21.0 %	21.0 %	35.0 %
State income taxes, net of federal benefit	(1.1)%	0.6 %	— %
Change in valuation allowance related to current activity	227.1 %	(21.3)%	(30.1)%
Change in valuation allowance related to change in tax rate	— %	— %	(291.2)%
Change in tax rate	— %	— %	291.2 %
Permanent items	(4.3)%	1.3 %	1.1 %
Provision to return adjustments and other	(1.4)%	(0.8)%	(7.9)%
Actual income tax rate	241.3 %	0.8 %	(1.9)%

Deferred tax assets (liabilities) are comprised of the following (in thousands):

	December 31,	
	2019	**2018**
Deferred tax assets:		
Net operating loss	$ 373,717	$ 396,033
Property, plant, and equipment	—	8,323
Intangible assets	—	444
Other	19,560	17,886
Total deferred tax assets	393,277	422,686
Valuation allowance	(330,251)	(394,196)
Net deferred tax assets	63,026	28,490
Deferred tax liabilities:		
Inventory	5,738	—
Property and equipment	64,281	—
Investment in Laramie Energy	11,609	26,981
Convertible notes	2,285	2,658
Intangible assets	750	—
Other	4,904	496
Total deferred tax liabilities	89,567	30,135
Total deferred tax liability, net	$ (26,541)	$ (1,645)

We have NOL carryforwards as of December 31, 2019 of $1.4 billion for federal income tax purposes. If not utilized, the NOL carryforwards will expire during 2027 through 2036. We also have AMT Credit Carryovers of $0.8 million which are refundable under the U.S. tax reform legislation effective in tax year 2019.

Note 21—Segment Information

We report the results for the following four reportable segments: (i) Refining, (ii) Retail, (iii) Logistics, and (iv) Corporate and Other. Commencing in the first quarter of 2018, the results of operations of Northwest Retail are included in our retail segment. Commencing January 11, 2019, the results of operations of the Washington Acquisition are included in our refining and logistics segments.

Summarized financial information concerning reportable segments consists of the following (in thousands):

For the year ended December 31, 2019	Refining	Logistics	Retail	Corporate, Eliminations, and Other (1)	Total
Revenues	$ 5,167,942	$ 199,226	$ 458,889	$ (424,541)	$ 5,401,516
Cost of revenues (excluding depreciation)	4,783,747	112,124	332,302	(424,584)	4,803,589
Operating expense (excluding depreciation)	234,582	11,010	67,307	—	312,899
Depreciation, depletion, and amortization	55,832	17,017	10,035	3,237	86,121
General and administrative expense (excluding depreciation)	—	—	—	46,223	46,223
Acquisition and integration costs	—	—	—	4,704	4,704
Operating income (loss)	$ 93,781	$ 59,075	$ 49,245	$ (54,121)	$ 147,980
Interest expense and financing costs, net					(74,839)
Debt extinguishment and commitment costs					(11,587)
Other income, net					2,516
Change in value of common stock warrants					(3,199)
Equity losses from Laramie Energy, LLC					(89,751)
Loss before income taxes					(28,880)
Income tax benefit					69,689
Net income					$ 40,809
Total assets	$ 1,907,318	$ 494,209	$ 232,150	$ 66,883	$ 2,700,560
Goodwill	77,927	55,232	62,760	—	195,919
Capital expenditures	34,492	40,730	6,869	1,829	83,920

(1) Includes eliminations of intersegment revenues and cost of revenues of $424.5 million for the year ended December 31, 2019.

For the year ended December 31, 2018	Refining	Logistics	Retail	Corporate, Eliminations, and Other (1)	Total
Revenues	$ 3,210,067	$ 125,743	$ 441,040	$ (366,122)	$ 3,410,728
Cost of revenues (excluding depreciation)	2,957,995	77,712	333,664	(366,255)	3,003,116
Operating expense (excluding depreciation)	146,320	7,782	61,182	—	215,284
Depreciation, depletion, and amortization	32,483	6,860	8,962	4,337	52,642
General and administrative expense (excluding depreciation)	—	—	—	47,426	47,426
Acquisition and integration costs	—	—	—	10,319	10,319
Operating income (loss)	$ 73,269	$ 33,389	$ 37,232	$ (61,949)	$ 81,941
Interest expense and financing costs, net					(39,768)
Debt extinguishment and commitment costs					(4,224)
Other income, net					1,046
Change in value of common stock warrants					1,801
Change in value of contingent consideration					(10,500)
Equity earnings from Laramie Energy, LLC					9,464
Income before income taxes					39,760
Income tax expense					(333)
Net income					$ 39,427
Total assets	$ 968,623	$ 130,138	$ 201,848	$ 160,125	$ 1,460,734
Goodwill	53,264	37,373	62,760	—	153,397
Capital expenditures	25,601	13,055	6,101	3,682	48,439

(1) Includes eliminations of intersegment revenues and cost of revenues of $365.5 million for the year ended December 31, 2018.

For the year ended December 31, 2017	Refining	Logistics	Retail	Corporate, Eliminations, and Other (1)	Total
Revenues	$ 2,319,638	$ 121,470	$ 326,076	$ (324,118)	$ 2,443,066
Cost of revenues (excluding depreciation)	2,062,804	66,301	249,097	(323,575)	2,054,627
Operating expense (excluding depreciation)	141,065	15,010	45,941	—	202,016
Depreciation, depletion, and amortization	29,753	6,166	6,338	3,732	45,989
General and administrative expense (excluding depreciation)	—	—	—	46,078	46,078
Acquisition and integration costs	—	—	—	395	395
Operating income (loss)	$ 86,016	$ 33,993	$ 24,700	$ (50,748)	$ 93,961
Interest expense and financing costs, net					(31,632)
Debt extinguishment and commitment costs					(8,633)
Other income, net					911
Change in value of common stock warrants					(1,674)
Equity earnings from Laramie Energy, LLC					18,369
Income before income taxes					71,302
Income tax benefit					1,319
Net income					$ 72,621
Total assets	$ 949,588	$ 118,304	$ 128,966	$ 150,549	$ 1,347,407
Goodwill	53,264	37,373	16,550	—	107,187
Capital expenditures	10,433	8,836	7,073	5,366	31,708

(1) Includes eliminations of intersegment revenues and cost of revenues of $325.2 million for the year ended December 31, 2017.

Note 22—Related Party Transactions

Term Loan

Certain of our stockholders, or affiliates of our stockholders, were the lenders under our Term Loan. In previous years, they received common stock warrants exercisable for shares of common stock in connection with the origination of the Term Loan. On June 15, 2016, the Term Loan was amended to permit (i) the issuance of the 5.00% Convertible Senior Notes, (ii) the issuance of the Bridge Notes, and (iii) the WRC Acquisition. We paid a consent fee of $2.5 million in connection with this amendment, $1.3 million of which was paid to an affiliate of Whitebox, previously one of our largest stockholders. On June 21, 2016, we repaid $5 million of the Term Loan pursuant to the terms of the amendment, $3.3 million of which was allocated to an affiliate of Whitebox.

On June 30, 2017, we fully repaid and terminated the Term Loan.

Convertible Notes Offering

In June 2016, we issued $115 million in aggregate principal amount of our 5.00% Convertible Senior Notes in a private placement under Rule 144A in the Notes Offering. Please read Note 12—Debt for further discussion.

Prior to the Notes Offering, we also entered into a backstop convertible note commitment letter with funds managed by Highbridge Capital Management, LLC ("Highbridge") and funds managed on behalf of Whitebox (collectively, the "Backstop Convertible Note Purchasers"), pursuant to which the Backstop Convertible Note Purchasers committed to purchase $100 million aggregate principal amount of senior unsecured convertible notes due 2021, which would be issued in a private offering pursuant to an exemption from the registration requirements of the Securities Act.

The obligations of the Backstop Convertible Note Purchasers to purchase convertible notes automatically terminated upon the consummation of the Notes Offering, provided that each of the Back Up Convertible Note Purchasers and their respective affiliates were allocated the opportunity to purchase at least $32.5 million of the 5.00% Convertible Senior Notes offered in the Notes Offering.

Affiliates of Whitebox and Highbridge purchased an aggregate of $47.5 million and $40.4 million, respectively, principal amount of the 5.00% Convertible Senior Notes in the Notes Offering.

Equity Group Investments ("EGI") - Service Agreement

On September 17, 2013, we entered into a letter agreement ("Services Agreement") with Equity Group Investments ("EGI"), an affiliate of Zell Credit Opportunities Fund, LP ("ZCOF"), which owns 10% or more of our common stock directly or through affiliates. Pursuant to the Services Agreement, EGI agreed to provide us with ongoing strategic, advisory, and consulting services that may include (i) advice on financing structures and our relationship with lenders and bankers, (ii) advice regarding public and private offerings of debt and equity securities, (iii) advice regarding asset dispositions, acquisitions, or other asset management strategies, (iv) advice regarding potential business acquisitions, dispositions, or combinations involving us or our affiliates, or (v) such other advice directly related or ancillary to the above strategic, advisory, and consulting services as may be reasonably requested by us.

EGI does not receive a fee for the provision of the strategic, advisory, or consulting services set forth in the Services Agreement, but may be periodically reimbursed by us, upon request, for (i) travel and out-of-pocket expenses, provided that, in the event that such expenses exceed $50 thousand in the aggregate with respect to any single proposed matter, EGI will obtain our consent prior to incurring additional costs, and (ii) provided that we provide prior consent to their engagement with respect to any particular proposed matter, all reasonable fees and disbursements of counsel, accountants, and other professionals incurred in connection with EGI's services under the Services Agreement. In consideration of the services provided by EGI under the Services Agreement, we agreed to indemnify EGI for certain losses relating to or arising out of the Services Agreement or the services provided thereunder.

The Services Agreement has a term of one year and will be automatically extended for successive one-year periods unless terminated by either party at least 60 days prior to any extension date. There were no costs incurred related to this agreement during the years ended December 31, 2019, 2018, or 2017.

Note 23—Quarterly Financial Data (Unaudited)

Summarized quarterly data for the years ended December 31, 2019 and 2018 consisted of the following (in thousands, except per share amounts):

	Year Ended December 31, 2019			
	Q1	Q2	Q3	Q4
Revenues	$ 1,191,335	$ 1,409,409	$ 1,401,638	$ 1,399,134
Operating income	21,423	48,621	18,405	59,531
Net income (loss)	61,092	28,169	(83,891)	35,439
Net income (loss) per share				
Basic	$ 1.23	$ 0.56	$ (1.65)	$ 0.68
Diluted	$ 1.14	$ 0.56	$ (1.65)	$ 0.68

	Year Ended December 31, 2018			
	Q1	Q2	Q3	Q4
Revenues	$ 765,439	$ 856,396	$ 909,781	$ 879,112
Operating income	27,656	28,983	4,894	20,408
Net income (loss)	15,185	16,178	(5,822)	13,886
Net income (loss) per share				
Basic	$ 0.33	$ 0.35	$ (0.13)	$ 0.30
Diluted	$ 0.33	$ 0.35	$ (0.13)	$ 0.30

Note 24—Supplemental Oil and Gas Disclosures (Unaudited)

Our share of Laramie Energy's capitalized costs related to oil and gas activities are as follows (in thousands):

	December 31,	
	2019	2018
Company's share of Laramie Energy		
Unproved properties	$ 14,722	$ 16,379
Proved properties	211,083	473,763
	225,805	490,142
Accumulated depreciation, depletion, and amortization	(63,791)	(150,075)
Total	$ 162,014	$ 340,067

Our share of Laramie Energy's costs incurred in oil and gas activities including costs associated with assets retirement obligations, are as follows (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Company's share of Laramie Energy			
Acquisition costs	$ —	$ —	$ —
Development costs—other	32,748	50,867	49,273
Total	$ 32,748	$ 50,867	$ 49,273

For the years ended December 31, 2019, 2018, and 2017, neither we nor Laramie Energy incurred exploratory well costs so no amounts were capitalized or expensed during these respective periods. Accordingly, there were no suspended exploratory well costs at December 31, 2019, 2018, and 2017 that were being evaluated.

As of December 31, 2019 and 2018, we had no significant capitalized costs related to our other non-operated natural gas and oil interests. For the years ended December 31, 2019 and 2018, we incurred no significant costs related to our other non-operated natural gas and oil interests.

A summary of the results of operations for oil and gas producing activities, excluding general and administrative costs, is as follows (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Company			
Revenue			
Oil and gas revenues	$ 156	$ 51	$ 288
Expenses			
Production costs	87	191	29
Depletion and amortization	6	17	66
Results of operations of oil and gas producing activities	$ 63	$ (157)	$ 193
Company's share of Laramie Energy			
Revenue			
Oil and gas revenues	$ 89,073	$ 93,493	$ 66,783
Expenses			
Production costs	41,446	42,706	32,606
Impairment of proved properties (1)	163,401	—	—
Depletion, depreciation, and amortization	38,011	26,819	21,277
Results of operations of oil and gas producing activities	$ (153,785)	$ 23,968	$ 12,900
Total results of operations of oil and gas producing activities	$ (153,722)	$ 23,811	$ 13,093

(1) Please read Note 3—Investment in Laramie Energy, LLC for further disclosures and information on Laramie Energy's impairment of proved properties.

Oil and Gas Reserve Information

There are numerous uncertainties inherent in estimating quantities of proved crude oil and natural gas reserves. Crude oil and natural gas reserve engineering is a subjective process of estimating underground accumulations of crude oil and natural gas that cannot be precisely measured. The accuracy of any reserve estimate is a function of the quality of available data and of engineering and geological interpretation and judgment. Results of drilling, testing, and production subsequent to the date of the estimate may justify revision of such estimate. Accordingly, reserve estimates are often different from the quantities of crude oil and natural gas that are ultimately recovered.

Estimates of our crude oil and natural gas reserves and present values as of December 31, 2019, 2018, and 2017, were prepared by Netherland, Sewell & Associates, Inc., independent reserve engineers.

A summary of changes in estimated quantities of proved reserves for the years ended December 31, 2019, 2018, and 2017 is as follows:

	Gas (MMcf)	Oil (Mbbl)	NGLS (Mbbl)	Total (MMcfe) (1)
Company				
Balance at January 1, 2017	330	7	8	420
Revisions of quantity estimate	109	2	3	139
Extensions and discoveries	—	—	—	—
Production	(47)	(2)	—	(59)
Balance at December 31, 2017	392	7	11	500
Revisions of quantity estimate	(269)	(2)	(10)	(341)
Extensions and discoveries	—	—	—	—
Production	(34)	(1)	—	(40)
Balance at December 31, 2018	89	4	1	119
Revisions of quantity estimate	222	1	7	270
Extensions and discoveries	—	—	—	—
Acquisitions and divestitures	(30)	(3)	—	(48)
Production	(20)	(1)	—	(26)
Balance at December 31, 2019	261	1	8	315
Company's share of Laramie Energy				
Balance at January 1, 2017	309,802	967	8,544	366,871
Revisions of quantity estimate	1,344	211	(434)	3
Extensions and discoveries	—	—	—	—
Acquisitions and divestitures	—	—	—	—
Production	(18,104)	(71)	(608)	(22,178)
Balance at December 31, 2017 (2)	293,042	1,107	7,502	344,696
Revisions of quantity estimate	47,871	732	5,602	85,875
Extensions and discoveries	—	—	—	—
Acquisitions and divestitures	22,391	12	191	23,609
Production	(25,513)	(106)	(712)	(30,421)
Balance at December 31, 2018 (3)	337,791	1,745	12,583	423,759
Revisions of quantity estimate	(69,924)	(681)	(6,287)	(111,732)
Extensions and discoveries	—	—	—	—
Acquisitions and divestitures	—	—	—	—
Production	(29,677)	(126)	(883)	(35,731)
Balance at December 31, 2019 (4)	238,190	938	5,413	276,296
Total at December 31, 2019	238,451	939	5,421	276,611

(1) MMcfe is based on a ratio of 6 Mcf to 1 barrel.

(2) During 2017, the Company's estimated proved reserves, inclusive of the Company's share of Laramie Energy's estimated proved reserves, decreased by 22,095 MMcfe or approximately 6%. Production volumes related to our share of Laramie Energy's estimated proved reserves resulted in a decrease of 22,178 MMcfe. The remaining change in estimated proved reserves was due to performance and other changes to the Company's share of Laramie Energy's proved developed producing and developed non-producing reserves.

(3) During 2018, the Company's estimated proved reserves, inclusive of the Company's share of Laramie Energy's estimated proved reserves, increased by 78,682 MMcfe or approximately 23%. The Company's share of Laramie Energy's revisions of quantity estimate increased primarily due to: 1) additions of 60,679 MMcfe of proved undeveloped reserves primarily located within Laramie Energy's northern acreage, 2) 11,614 MMcfe of positive revisions associated with 13 probable locations that

were converted to proved developed reserves during 2018, and 3) 13,582 MMcfe of positive revisions due to performance improvements and other changes to the Company's share of Laramie Energy's proved developed and undeveloped reserves. Production volumes related to our share of Laramie Energy's estimated proved reserves resulted in a decrease of 30,421 MMcfe. During 2018, Laramie Energy closed on a purchase and contribution agreement with an unaffiliated third party that contributed 23,609 MMcfe of proved developed reserves in the Piceance Basin.

(4) During 2019, the Company's estimated proved reserves, inclusive of the Company's share of Laramie Energy's estimated proved reserves, decreased by 147,267 MMcfe or approximately 35%. The decreased was primarily due to: 1) 57,212 MMcfe downward revision driven by the removal of proved undeveloped locations from the development plan due to unfavorable market conditions, and 2) 54,520 MMcfe downward revision due to decreases in average natural gas prices in 2019 compared to 2018. Production volumes related to our share of Laramie Energy's estimated proved reserves resulted in a decrease of 35,731 MMcfe.

A summary of proved developed and undeveloped reserves for the years ended December 31, 2019, 2018, and 2017 is presented below:

	Gas (MMcf)	Oil (Mbbl)	NGLS (Mbbl)	Total (MMcfe) (1)
December 31, 2017				
Proved developed reserves				
Company	392	7	11	500
Company's share of Laramie Energy	174,464	658	4,589	205,946
Total	174,856	665	4,600	206,446
Proved undeveloped reserves				
Company	—	—	—	—
Company's share of Laramie Energy	118,578	449	2,913	138,750
Total	118,578	449	2,913	138,750
December 31, 2018				
Proved developed reserves				
Company	89	4	1	119
Company's share of Laramie Energy	256,363	1,420	8,868	318,091
Total	256,452	1,424	8,869	318,210
Proved undeveloped reserves				
Company	—	—	—	—
Company's share of Laramie Energy	81,428	325	3,715	105,668
Total	81,428	325	3,715	105,668
December 31, 2019				
Proved developed reserves				
Company	261	1	8	315
Company's share of Laramie Energy	238,190	938	5,413	276,296
Total	238,451	939	5,421	276,611
Proved undeveloped reserves				
Company	—	—	—	—
Company's share of Laramie Energy	—	—	—	—
Total	—	—	—	—

(1) MMcfe is based on a ratio of 6 Mcf to 1 barrel.

	Price per MMbtu	WTI per Bbl
Base pricing, before adjustments for contractual differentials (Company and Laramie Energy): (1)		
December 31, 2017	$ 2.68	$ 51.34
December 31, 2018	2.47	65.56
December 31, 2019	2.04	55.85

(1) Proved reserves are required to be calculated based on the 12-month, first day of the month historical average price in accordance with SEC rules. The prices shown above are base index prices to which adjustments are made for contractual deducts and other factors.

Future net cash flows presented below are computed using applicable prices (as summarized above) and costs and are net of all overriding royalty revenue interests.

	December 31,		
	2019	2018	2017
	(in thousands)		
Company			
Future net cash flows	$ 833	$ 398	$ 1,802
Future costs			
Production	509	123	902
Development and abandonment	37	35	—
Income taxes (1)	—	—	—
Future net cash flows	287	240	900
10% discount factor	(106)	(110)	(328)
Discounted future net cash flows	$ 181	$ 130	$ 572
Company's share of Laramie Energy			
Future net cash flows	$ 669,271	$ 1,283,890	$ 1,026,005
Future costs			
Production	398,193	583,112	491,748
Development and abandonment	25,277	93,546	109,248
Income taxes (1)	—	—	—
Future net cash flows	245,801	607,232	425,009
10% discount factor	(105,966)	(288,130)	(209,188)
Discounted future net cash flows	$ 139,835	$ 319,102	$ 215,821
Total discounted future net cash flows	$ 140,016	$ 319,232	$ 216,393

(1) No income tax provision is included in the standardized measure of discounted future net cash flows calculation shown above as we do not project to be taxable or pay cash income taxes based on its available tax assets and additional tax assets generated in the development of its reserves because the tax basis of its oil and gas properties and NOL carryforwards exceeds the amount of discounted future net earnings.

The principal sources of changes in the standardized measure of discounted net cash flows for the years ended December 31, 2019, 2018, and 2017 are as follows (in thousands):

	Company	Company's Share of Laramie Energy	Total
Balance at January 1, 2017	$ 285	$ 141,142	$ 141,427
Sales of oil and gas production during the period, net of production costs	(28)	(29,911)	(29,939)
Net change in prices and production costs	(60)	35,597	35,537
Revisions of previous quantity estimates, estimated timing of development and other	346	37,692	38,038
Previously estimated development and abandonment costs incurred during the period	—	17,187	17,187
Accretion of discount	29	14,114	14,143
Balance at December 31, 2017	572	215,821	216,393
Sales of oil and gas production during the period, net of production costs	(127)	(47,165)	(47,292)
Acquisitions and divestitures	—	35,182	35,182
Net change in prices and production costs	20	(1,365)	(1,345)
Revisions of previous quantity estimates, estimated timing of development and other	(392)	54,311	53,919
Previously estimated development and abandonment costs incurred during the period	—	40,736	40,736
Accretion of discount	57	21,582	21,639
Balance at December 31, 2018	130	319,102	319,232
Sales of oil and gas production during the period, net of production costs	(55)	(59,093)	(59,148)
Acquisitions and divestitures	(143)	—	(143)
Net change in prices and production costs	(24)	(114,195)	(114,219)
Revisions of previous quantity estimates, estimated timing of development and other	260	(64,333)	(64,073)
Previously estimated development and abandonment costs incurred during the period	—	26,444	26,444
Accretion of discount	13	31,910	31,923
Balance at December 31, 2019	$ 181	$ 139,835	140,016

SCHEDULE I - CONDENSED FINANCIAL INFORMATION OF REGISTRANT
PAR PACIFIC HOLDINGS, INC. (PARENT ONLY)
BALANCE SHEETS
(in thousands, except share data)

	December 31, 2019	December 31, 2018
ASSETS		
Current assets		
Cash and cash equivalents	$ 6,309	$ 28,701
Restricted cash	743	743
Total cash, cash equivalents, and restricted cash	7,052	29,444
Prepaid and other current assets	12,325	11,711
Due from subsidiaries	180,686	43,928
Total current assets	200,063	85,083
Property, plant, and equipment		
Property, plant, and equipment	20,961	18,939
Less accumulated depreciation, depletion, and amortization	(12,117)	(9,034)
Property, plant, and equipment, net	8,844	9,905
Long-term assets		
Operating lease assets	4,276	—
Investment in subsidiaries	636,742	638,975
Other long-term assets	1,128	3,334
Total assets	$ 851,053	$ 737,297
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	$ 2,597	$ 8,312
Operating lease liabilities	698	—
Other accrued liabilities	14,591	12,349
Due to subsidiaries	125,778	96,963
Total current liabilities	143,664	117,624
Long-term liabilities		
Long-term debt, net of current maturities	44,783	100,411
Common stock warrants	8,206	5,007
Finance lease liabilities	223	475
Operating lease liabilities	5,629	—
Other liabilities	306	1,451
Total liabilities	202,811	224,968
Stockholders' equity		
Preferred stock, $0.01 par value: 3,000,000 shares authorized, none issued	—	—
Common stock, $0.01 par value; 500,000,000 shares authorized at December 31, 2019 and December 31, 2018, 53,254,151 shares and 46,983,924 shares issued at December 31, 2019 and December 31, 2018, respectively	533	470
Additional paid-in capital	715,069	617,937
Accumulated deficit	(67,942)	(108,751)
Accumulated other comprehensive income	582	2,673
Total stockholders' equity	648,242	512,329
Total liabilities and stockholders' equity	$ 851,053	$ 737,297

This statement should be read in conjunction with the notes to consolidated financial statements.

SCHEDULE I - CONDENSED FINANCIAL INFORMATION OF REGISTRANT
PAR PACIFIC HOLDINGS, INC. (PARENT ONLY)
STATEMENTS OF OPERATIONS
(in thousands)

	Year Ended December 31,		
	2019	2018	2017
Operating expenses			
Depreciation and amortization	$ 2,969	$ 4,092	$ 2,871
General and administrative expense (excluding depreciation)	20,017	20,721	18,922
Acquisition and integration costs	28	10,118	192
Total operating expenses	23,014	34,931	21,985
Operating loss	(23,014)	(34,931)	(21,985)
Other income (expense)			
Interest expense and financing costs, net	(9,952)	(10,867)	(13,709)
Debt extinguishment and commitment costs	(6,091)	—	(1,804)
Other income, net	2,303	1,155	631
Change in value of common stock warrants	(3,199)	1,801	(1,674)
Equity in earnings (losses) from subsidiaries	81,097	81,942	111,162
Total other income (expense), net	64,158	74,031	94,606
Income before income taxes	41,144	39,100	72,621
Income tax benefit (expense)	(335)	327	—
Net income	$ 40,809	$ 39,427	$ 72,621

This statement should be read in conjunction with the notes to consolidated financial statements.

SCHEDULE I - CONDENSED FINANCIAL INFORMATION OF REGISTRANT
PAR PACIFIC HOLDINGS, INC. (PARENT ONLY)
STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)

	Year Ended December 31,		
	2019	**2018**	**2017**
Net income	$ 40,809	$ 39,427	$ 72,621
Other comprehensive income (loss): (1)			
Other post-retirement benefits income (loss), net of tax	(2,091)	529	(52)
Total other comprehensive income (loss), net of tax	(2,091)	529	(52)
Comprehensive income	$ 38,718	$ 39,956	$ 72,569

(1) Other comprehensive income (loss) relates to benefit plans at our subsidiaries.

This statement should be read in conjunction with the notes to consolidated financial statements.

SCHEDULE I - CONDENSED FINANCIAL INFORMATION OF REGISTRANT
PAR PACIFIC HOLDINGS, INC. (PARENT ONLY)
STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended December 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net income	$ 40,809	$ 39,427	$ 72,621
Adjustments to reconcile net income to cash used in operating activities:			
Depreciation and amortization	2,969	4,092	2,871
Non-cash interest expense	4,600	4,925	5,617
Change in value of common stock warrants	3,199	(1,801)	1,674
Stock-based compensation	6,437	6,196	7,204
Equity in losses (income) of subsidiaries	(81,097)	(81,942)	(111,162)
Debt extinguishment and commitment costs	6,091	—	1,804
Net changes in operating assets and liabilities:			
Prepaid and other assets	1,592	(2,604)	(2,568)
Accounts payable, other accrued liabilities, and operating lease assets and liabilities	(8,441)	5,601	3,088
Net cash used in operating activities	(23,841)	(26,106)	(18,851)
Cash flows from investing activities:			
Investments in subsidiaries	—	—	(2,072)
Distributions from subsidiaries	16,673	—	70,645
Capital expenditures	(1,829)	(3,682)	(5,366)
Due to (from) subsidiaries	(6,519)	(25,102)	80,762
Other investing activities	31	—	—
Net cash provided by (used in) investing activities	8,356	(28,784)	143,969
Cash flows from financing activities:			
Proceeds from sale of common stock, net of offering costs	—	19,318	—
Proceeds from borrowings	63,406	10,770	—
Repayments of borrowings	(76,323)	(11,253)	(68,873)
Payment of deferred loan costs	(252)	—	—
Exercise of stock options	8,171	—	—
Payment for debt extinguishment and commitment costs	(1,899)	—	—
Other financing activities, net	(10)	(860)	(993)
Net cash provided by (used in) financing activities	(6,907)	17,975	(69,866)
Net increase (decrease) in cash, cash equivalents, and restricted cash	(22,392)	(36,915)	55,252
Cash, cash equivalents, and restricted cash at beginning of period	29,444	66,359	11,107
Cash, cash equivalents, and restricted cash at end of period	$ 7,052	$ 29,444	$ 66,359
Supplemental cash flow information:			
Net cash received (paid) for:			
Interest	$ (5,357)	$ (5,750)	$ (7,856)
Taxes	(220)	(49)	(1,478)
Non-cash investing and financing activities:			
Accrued capital expenditures	$ 497	$ 714	$ 370
ROU assets obtained in exchange for new finance lease liabilities	198	539	165
ROU assets obtained in exchange for new operating lease liabilities	134	—	—
Common stock issued for business combination	36,980	—	—
Non-cash contribution to subsidiary for business combination	(36,980)	—	—
Common stock issued to repurchase convertible notes	74,290	—	—

This statement should be read in conjunction with the notes to consolidated financial statements.

Item 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange of Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized on March 2, 2020.

PAR PACIFIC HOLDINGS, INC.

By: /s/ William Pate
William Pate
President and Chief Executive Officer

By: /s/ William Monteleone
William Monteleone
Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this Form 10-K has been signed below by the following persons on our behalf and in the capacities indicated and on March 2, 2020.

Signature	Title
/s/ WILLIAM PATE William Pate	President and Chief Executive Officer (Principal Executive Officer)
/s/ WILLIAM MONTELEONE William Monteleone	Chief Financial Officer (Principal Financial Officer)
/s/ IVAN GUERRA Ivan Guerra	Chief Accounting Officer (Principal Accounting Officer)
/s/ MELVYN N. KLEIN Melvyn N. Klein	Chairman Emeritus
/s/ ROBERT S. SILBERMAN Robert S. Silberman	Chairman of the Board of Directors
/s/ TIMOTHY CLOSSEY Timothy Clossey	Director
/s/ L. MELVIN COOPER L. Melvin Cooper	Director
/s/ CURTIS ANASTASIO Curtis Anastasio	Director
/s/ WALTER A. DODS, JR. Walter A. Dods, Jr.	Director
/s/ JOSEPH ISRAEL Joseph Israel	Director
/s/ KATHERINE HATCHER Katherine Hatcher	Director

DESCRIPTION OF REGISTERED SECURITIES

As of February 20, 2020, Par Pacific Holdings, Inc. (the "Company," "us," "we," or "our") has one class of securities, our common stock, registered under Section 12 of the Securities Exchange Act of 1934, as amended.

Description of Common Stock

The following description of our common stock is a summary and does not purport to be complete. It is subject to and qualified in its entirety by reference to our Restated Certificate of Incorporation dated October 20, 2015 (the "Certificate of Incorporation") and our Second Amended and Restated Bylaws dated October 20, 2015 (the "Bylaws"), as well as our stockholders agreement, the allocation agreement with certain of our stockholders (the "Allocation Agreement"), the warrant issuance agreement (the "Warrant Issuance Agreement") with respect to our issuance of warrants in August 2012, the indenture (the "Convertible Notes Indenture") under which we issued our 5.00% convertible senior notes due 2021 (the "Convertible Notes"), the registration rights agreement (the "Registration Rights Agreement") we entered into with certain of our stockholders in August 2012, the registration rights agreement (the "Convertible Notes Registration Rights Agreement") with respect to the issuance (the "Convertible Notes Offering") of our Convertible Notes, and the registration rights agreement (the "Bridge Notes Registration Rights Agreement") with respect to the issuance of our 2.50% convertible subordinated bridge notes on September 23, 2016 (the "Bridge Notes"), each of which are incorporated by reference as an exhibit to the Annual Report on Form 10-K of which this Exhibit 4.25 is a part. We encourage you to read our Certificate of Incorporation, our Bylaws, our stockholders agreement, the Allocation Agreement, the Warrant Issuance Agreement, the Convertible Notes Indenture, the Registration Rights Agreement, the Convertible Notes Registration Rights Agreement, the Bridge Notes Registration Rights Agreement, and the applicable provisions of the General Corporation Law of the State of Delaware (the "DGCL") for additional information.

General

As of February 20, 2020, our authorized capital consisted of 500,000,000 shares of common stock, par value $0.01 per share, of which 53,375,501 shares were issued and outstanding, and 3,000,000 shares of undesignated preferred stock, par value $0.01 per share, none of which were outstanding.

Holders of our common stock are entitled to one vote per share in the election of directors and on all other matters submitted to a vote of stockholders. Such holders do not have the right to cumulate their votes in the election of directors. Holders of our common stock have no redemption or conversion rights, no preemptive or other rights to subscribe for our securities and are not entitled to the benefits of any sinking fund provisions. In the event of our liquidation, dissolution or winding-up, holders of our common stock are entitled to share equally and ratably in all of the assets remaining, if any, after satisfaction of all our debts and liabilities, and of the preferential rights of any series of preferred stock then outstanding. Subject to preferences that may be applicable to any then outstanding preferred stock, holders of our common stock are entitled to receive dividends when, as and if declared by the Company's board of directors (the "Board") out of funds legally available therefor.

The Certificate of Incorporation contains restrictions on the transfer of the Company Securities (as defined therein, and which includes our common stock) by holders who are, or would become as a result of such transfer, a Five-Percent Shareholder (as defined in the Certificate of Incorporation). Such restrictions were put in place in order to preserve our net operating loss carryovers, capital loss carryovers, general business credit carryovers, alternative minimum tax credit carryovers and foreign tax credit carryovers, as well as any "net unrealized built-in loss" within the meaning of Section 382 of the Internal Revenue Code of 1986, as amended.

On November 10, 2014, as permitted by the terms of Article 11 of the Certificate of Incorporation, we entered into the Allocation Agreement with Zell Credit Opportunities Master Fund, L.P. ("ZCOF"), ZCOF Par Petroleum Holdings, L.L.C. and Whitebox Multi-Strategy Partners, L.P. to reallocate the proportionate amount of our common stock that the Five-Percent Shareholders are permitted to transfer among our remaining Five-Percent Shareholders. In accordance with Article 11 of the Certificate of Incorporation, the Board has approved, on a prospective basis, one or more Transfers (as defined in the Certificate of Incorporation) of shares of our common stock by the remaining Five-Percent Shareholders up to the new allocation amounts included on a schedule to the Allocation Agreement.

Warrants

On August 31, 2012, pursuant to the terms of the Warrant Issuance Agreement, we issued warrants (the “Warrants”) to purchase up to an aggregate of 959,213 shares (the “Warrant Shares”) of our common stock. The holders of the Warrants are entitled to purchase Warrant Shares at an exercise price of $0.09 per share, subject to certain adjustments from time to time. The Warrants expire on the earlier of August 31, 2022 or the occurrence of certain merger or consolidation transactions. As of February 20, 2020, Warrants to purchase an aggregate of 253,015 Warrant Shares were outstanding.

The number of shares of our common stock issuable upon exercise of the Warrants and the exercise prices of the Warrants will be adjusted in connection with certain issuances or sales of shares of our common stock and convertible securities, or any subdivision, reclassification or combinations of common stock, as set forth in the Warrant Issuance Agreement. Additionally, in the case of any reclassification or capital reorganization of our capital stock, the holder of each Warrant outstanding immediately prior to the occurrence of such reclassification or reorganization shall have the right to receive upon exercise of the applicable Warrant, the kind and amount of stock, other securities, cash or other property that such holder would have received if such Warrant had been exercised.

Preferred Stock

The Board is authorized to establish one or more series of preferred stock and to determine, with respect to any series of preferred stock, the powers, designation, preferences and rights of each series and the qualifications, limitations or restrictions of each series, including:

- the designation of the series and the number of shares to constitute the series;
- the dividend rate of the series, the conditions and dates upon which such dividends shall be payable, the relation which such dividends shall bear to the dividends payable on any other class or classes of stock, and whether such dividends shall be cumulative or noncumulative;
- whether the shares of the series shall be subject to redemption by the Company and, if made subject to such redemption, the times, prices and other terms and conditions of such redemption;
- the terms and amount of any sinking fund provided for the purchase or redemption of the shares of the series;
- whether or not the shares of the series shall be convertible into or exchangeable for shares of any other class or classes or of any other series of any class or classes of stock of the Company, and, if provision be made for conversion or exchange, the times, prices, rates, adjustments and other terms and conditions of such conversion or exchange;
- the extent, if any, to which the holders of the shares of the series shall be entitled to vote with respect to the election of directors or otherwise;
- the restrictions, if any, on the issue or reissue of any additional preferred stock; and
- rights of the holders of the shares of the series upon the dissolution, liquidation, or winding up of the Company.

The authorized shares of preferred stock, as well as shares of common stock, are available for issuance without further action by our stockholders, unless stockholder action is required by the rules of any stock exchange or automated quotation system on which our securities are listed or traded. If the approval of our stockholders is not required for the issuance of shares of preferred stock or common stock, the Board may determine not to seek stockholder approval.

Although the Board has no intention at the present time of doing so, it could issue a series of preferred stock that could, depending on the terms of that series, impede the completion of a merger, tender offer or other takeover attempt. The Board will make any determination to issue shares based on its judgment as to our best interests and the best interests of our stockholders. The Board, in so acting, could issue preferred stock having terms that could discourage an acquisition attempt, including a tender offer or other transaction that some, or a majority of, our stockholders might believe to be in their best interests or that might result in stockholders receiving a premium for their stock over the then current market price of the stock.

Convertible Notes

On June 21, 2016, the Convertible Notes were issued pursuant to the Convertible Notes Indenture. The Convertible Notes bear interest of 5.00% per year from June 21, 2016 (payable semi-annually in arrears on June 15 and December 15 of each year, beginning on December 15, 2016), and will mature on June 15, 2021.

The Convertible Notes are convertible at an initial conversion rate of 55.5556 shares of our common stock per $1,000 principal amount of the Convertible Notes, which is equivalent to an initial conversion price of approximately $18.00 per share of common stock. The conversion rate is subject to adjustment in some events. In addition, following certain corporate events that occur prior to the maturity date, the Company will increase, in certain circumstances, the conversion rate for a holder who elects to convert its Convertible Notes in connection with such a corporate event. Upon conversion, the Company may satisfy its conversion obligation by paying or delivering, as applicable, cash, shares of its common stock or a combination of cash and shares of its common stock, at its election, provided, however, that if the Board determines in good faith that the issuance of any shares of common stock in any conversion or in respect of any make-whole premium would cause the Company to undergo an “ownership change” as defined in Section 382 of the Internal Revenue Code of 1986, as amended, and the Treasury Regulations promulgated thereunder, then the Company will be required to settle such conversions or make-whole premium in cash or in a combination of cash and shares of common stock to the extent of such determination. If a “fundamental change” (as described in the Convertible Notes Indenture) occurs, then holders of the Convertible Notes may, subject to certain restrictions, require the Company to repurchase for cash all or part of the Convertible Notes in principal amounts of $1,000 or an integral multiple thereof at a repurchase price equal to 100% of the principal amount of the Convertible Notes to be repurchased, plus accrued and unpaid interest.

As of February 20, 2020, there was $48.7 million aggregate principal amount of Convertible Notes outstanding.

Anti-Takeover Provisions

As noted above, because our stockholders do not have cumulative voting rights, stockholders holding a majority of the shares of common stock outstanding will be able to elect all of our directors. The Certificate of Incorporation and the Bylaws provide that only the chairman of the Board, the chief executive officer, or any officer upon the written request of a majority of the Board, may call a special meeting of the stockholders.

The Certificate of Incorporation requires a 66 2/3% stockholder vote for the amendment or repeal of certain provisions of the Certificate of Incorporation relating to the liability of directors, indemnification of officers and directors, and the transfer restrictions noted above. The Bylaws require a 66 2/3% stockholder vote for the amendment or repeal of certain provisions of the Bylaws. The combination of the lack of cumulative voting and the 66 2/3% stockholder voting requirements will make it more difficult for existing stockholders to replace the Board as well as for another party to obtain control of us by replacing the Board. Because the Board has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for the Board to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change control of us.

These provisions may have the effect of deterring hostile takeovers or delaying changes in control or management of us. These provisions are intended to enhance the likelihood of continued stability in the composition of the Board and its policies and to discourage certain types of transactions that may involve an actual or threatened acquisition of us. These provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal. The provisions also are intended to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and, as a consequence, they also may inhibit fluctuations in the market price of our shares that could result from actual or rumored takeover attempts. Such provisions may also have the effect of preventing changes in our management.

As noted above, the Certificate of Incorporation contains restrictions on the transfer of Company Securities by holders who are, or would become as a result of such transfer, Five-Percent Shareholders. These restrictions on transfer may have the effect of preserving effective control of us by our principal stockholders and preserving the tenure of the board of directors and management.

In addition, we are subject to Section 203 of the DGCL which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the Board of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested holder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (i) by persons who are directors and also officers and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or after such date, the business combination is approved by the Board and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 of the DGCL defines business combination to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- the sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loss, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 of the DGCL defines an “interested stockholder” as an entity or person who, together with the person’s affiliates and associates, beneficially owns, or is an affiliate or associate of the corporation and within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

Stockholders Agreement

We entered into a stockholders agreement in April 2015 for the benefit of the holders of any of our securities entitled to vote for members of the Board providing that in the event that we are no longer required to file annual and quarterly reports with the SEC, we will provide, as soon as reasonably practicable, comparable audited reports on an annual basis, unaudited reports on a quarterly basis (which annual and quarterly reports shall contain substantially similar descriptions of business and management discussion and analysis provisions as are then required to be included in relevant filings with the SEC), and earnings releases on a quarterly basis, made available to such holders through a secure website and subject to a standard click-through access and confidentiality agreement.

Registration Rights Agreements

Registration Rights Agreement

The Company and certain of our stockholders (the “Rights Holders”), including affiliates of ZCOF and Whitebox Advisors, LLC (“Whitebox”), are parties to the Registration Rights Agreement providing the Rights Holders with certain registration rights.

Pursuant to the Registration Rights Agreement, among other things, any Rights Holder or group of Rights Holders that, together with its or their affiliates, holds more than fifteen percent (15%) of the Registrable Shares (as defined in the Registration Rights Agreement), will have the right to require the Company to file with the SEC, a registration statement on Form S-1 or S-3, or any other appropriate form under the Securities Act or the Exchange Act for a public offering of all or part of its Registrable Shares (a “Demand Registration”) by delivery of written notice to the Company (a “Demand Request”).

Within 90 days after receiving the Demand Request, we are required to file with the SEC the registration statement, on any form for which we then qualify, and which is available for the sale of the Registrable Shares in accordance with the intended methods of distribution thereof, with respect to the Demand Registration. We are required to use commercially reasonable efforts to cause the registration statement to be declared effective as soon as practicable after such filing. We will not be obligated (i) to effect a Demand Registration within ninety (90) days after the effective date of a previous Demand Registration, other than for a shelf registration, or (ii) to effect a Demand Registration unless the Demand Request is for a number of Registrable Shares with an expected market value that is equal to at least (x) $15 million as of the date of such Demand Request or is for one hundred percent of the demanding holders’ Registrable Shares with respect to any demand registration made on Form S-1 or (y) $5 million as of the date of such Demand Request with respect to any Demand Registration made on Form S-3.

Upon receipt of any Demand Request, we are required to give written notice, within ten (10) days of such Demand Request, to all other holders of Registrable Shares, who will have the right to elect to include in any subsequent Demand Registration such portion of their Registrable Shares as they may request, subject to certain exceptions.

In addition, subject to certain exceptions, if we propose to register any class of our common stock for sale to the public, we are required, subject to certain conditions, to include all Registrable Shares with respect to which the Company has received written requests for inclusion.

The rights of a holder of Registrable Shares may be transferred, assigned or otherwise conveyed to any transferee or assignee of such Registrable Shares, subject to applicable state and federal securities laws and regulations and the Certificate of Incorporation. We will be responsible for expenses relating to the registrations contemplated by the Registration Rights Agreement.

The registration rights granted in the Registration Rights Agreement are subject to customary indemnification and contribution provisions, as well as customary restrictions such as suspension periods and, if a registration is for an underwritten offering, limitations on the number of shares to be included in the underwritten offering imposed by the managing underwriter.

Pursuant to the Registration Rights Agreement, a registration statement relating to resales by affiliates of ZCOF and Whitebox of the shares received by them in connection with our emergence from bankruptcy on August 31, 2012 was declared effective by the SEC on June 23, 2015.

Convertible Notes Offering Registration Rights

In connection with the closing of the Convertible Notes Offering, we entered into a registration rights agreement with the initial purchasers under which we agreed for the benefit of the holders of the Convertible Notes and any shares of our common stock issuable upon conversion of the Convertible Notes or in respect of any make-whole premium that we will, at our cost, file a shelf registration statement covering resales of any shares of our common stock issuable upon conversion of the Convertible Notes and in respect of any make-whole premium.

The registration statement required by the terms of the Convertible Notes Registration Rights Agreement was declared effective by the SEC on November 30, 2016.

We may suspend the effectiveness of the shelf registration statement or the use of the prospectus that is part of the shelf registration statement during specified periods under certain circumstances relating to pending corporate developments, public filings with the SEC and similar events. We need not specify the nature of the event giving rise to a suspension in any suspension notice to holders of the Convertible Notes. Each holder, by its acceptance of the Convertible Notes, agrees to hold any such suspension notice in response to a notice of a proposed sale in confidence. Except in the case of a suspension period as the result of the filing of a post-effective amendment solely to add additional selling security holders, any suspension period may not exceed an aggregate of 30 days in any 90-day period or 60 days in any 360-day period. However, if the disclosure relates to a proposed or pending material business transaction, the disclosure of which the Board determines in good faith would be reasonably likely to impede our ability to consummate such transaction, or would otherwise be seriously detrimental to us and our subsidiaries taken as a whole, we may extend the suspension period from 30 days to 45 days in any 90-day period or from 60 days to 90 days in any 360-day period.

If a registration default occurs, predetermined liquidated damages will accrue on the Convertible Notes, from, and including, the day following such registration default to, but excluding, the earlier of (1) the day on which such registration default has been cured and (2) the date the registration statement is no longer required to be kept effective for our common stock. The liquidated damages will be paid to those entitled to interest payments on such dates semiannually in arrears on each June 15 and December 15 and will accrue at a rate per year equal to:

- 0.25% of the principal amount of the Convertible Notes to, and including, the 90th day following such registration default; or
- 0.50% of the principal amount of the Convertible Notes from, and after, the 91st day following such registration default.

We will not pay liquidated damages on any Convertible Note after it has been converted into shares of our common stock. If a Convertible Note ceases to be outstanding during a registration default (as a result of the holder exercising its conversion rights or otherwise), we will prorate the liquidated damages to be paid with respect to that Convertible Note.

In no event will liquidated damages exceed 0.50% per year. If a holder converts some or all of its Convertible Notes and we issue any shares of our common stock to satisfy all or any portion of our conversion obligation or if we issue any shares of our common stock in respect of any make-whole premium, in each case, when there exists a registration default, such holder will not be entitled to receive liquidated damages on such common stock, and we will instead increase the conversion rate or the amount of such make-whole premium, as the case may be, by 3% for each $1,000 principal amount of Convertible Notes. If a registration default occurs after a holder has converted its Convertible Notes into shares of our common stock or after we have issued shares of our common stock in respect of any make-whole premium, such holder will not be entitled to any compensation with respect to such common stock. Other than our obligations to pay liquidated damages, we will not have any liability for damages with respect to a registration default on any registrable securities.

Bridge Notes Registration Rights

In connection with the issuance of the Bridge Notes, we entered into the Bridge Notes Registration Rights Agreement with the purchasers of the Bridge Notes (the “Bridge Notes Purchasers”). The Bridge Notes Registration

Rights Agreement required us (i) to file, no later November 11, 2016, with the SEC a shelf registration statement covering resales of the shares of our common stock, if any, issuable upon (1) conversion of the Bridge Notes, (2) exercise of subscription rights by any Bridge Note Purchaser or its affiliates pursuant to our 2016 subscription rights offering, and (3) a stock dividend or stock split or in connection with any combination of shares, recapitalization, merger, consolidation or other reorganization, other than shares freely tradeable without any limitations or restrictions under the Securities Act, (ii) to use our commercially reasonable efforts to cause such shelf registration statement to be declared effective by the SEC no later than (A) January 6, 2017 or (B) if earlier, five business days after the date on which the SEC informs us that it will not review the shelf registration statement, and (iii) to use our commercially reasonable efforts to keep such shelf registration statement effective until the earlier of (A) the date on which all of such shares have been sold, (B) the date on which such shares may be sold without volume restrictions under Rule 144 of the Securities Act, or (C) the third anniversary of the effective date of such shelf registration statement.

If we do not fulfill our obligations under the Bridge Notes Registration Rights Agreement with respect to the filing deadline, effectiveness deadline or effectiveness period of a registration statement, we will be required to pay the holders of the Bridge Notes liquidated damages in an amount in cash equal to 1.00% of such holder's "Allocated Purchase Price," which is the amount effectively paid by such holder for the common stock acquired upon conversion of the Bridge Notes, per calendar month or portion thereof prior to the cure of such event of default. The maximum payment of liquidated damages to any such holder associated with all events of default will not exceed 5.00% of such holder's Allocated Purchase Price.

The registration statement required by the terms of the Bridge Notes Registration Rights Agreement was declared effective by the SEC on December 21, 2016.

Listing

Our common stock is quoted on the NYSE under the symbol "PARR."

Transfer Agent and Registrar

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

PAR PACIFIC HOLDINGS, INC.
RESTRICTED STOCK AWARD AGREEMENT

THIS AGREEMENT is made and entered into as of this ___ day of _______, 2020 (the "**Grant Date**") by and between Par Pacific Holdings, Inc., a Delaware corporation (the "**Company**"), and _______ (the "**Participant**"), pursuant to the Par Pacific Holdings, Inc. 2012 Long Term Incentive Plan (the "**Plan**"). This Agreement and the Award contained herein are subject to the terms and conditions set forth in the Plan, which are incorporated by reference herein, and the following terms and conditions:

WITNESSETH:

WHEREAS, the Participant is an employee of, or is engaged to provide Services to, the Company or its Subsidiaries or Affiliates;

WHEREAS, the Company has adopted the Plan in order to advance the interests of the Company and its stockholders by providing an incentive to attract, retain and reward persons performing Services for the Company and by motivating such persons to contribute to the growth and profitability for the Company;

WHEREAS, the Compensation Committee of the Board (the "**Committee**") of the Board of Directors of the Company (the "**Board**") has determined that it is in the best interests of the Company to grant Restricted Stock (as defined herein) under the Plan to the Participant on the terms and conditions set forth below to encourage the Participant to remain in the employ of, or continue to provide Services to, the Company or its Subsidiaries or Affiliates and to reward the Participant for the Participant's continued Service; and

WHEREAS, the Participant is entrusted with knowledge of the confidential and proprietary information and particular business methods of the Company and its Subsidiaries and Affiliates (the "**Company Group**") and the clients of the Company Group, and the Participant is trained and instructed in the Company Group's particular operations, all of which is exceptionally valuable to the Company Group and vital to the success of the Company Group's business.

NOW, THEREFORE, in consideration of the various covenants and agreements herein contained, and intending to be legally bound hereby, the parties hereto agree as follows:

1. Award of Restricted Stock. In consideration for the continued Service of the Participant to any member of the Company Group, and as part of the Plan, the Company hereby awards to the Participant, subject to the further terms and conditions set forth in this Agreement, _____ shares (the "**Restricted Stock**") of its common stock, $0.01 par value per share (the "**Stock**"), as of the Grant Date.

2. Rights of Stockholder. The Participant shall have all of the rights of a stockholder with respect to the shares of Restricted Stock (including the right to vote the shares of Restricted Stock and the right to receive dividends with respect to the shares of Restricted Stock), except as

provided in Section 3 and Section 6 hereof. All cash dividends on shares of Stock that are the subject of this Agreement shall be paid in cash; provided, however, that cash dividends paid to the Participant with respect to shares of Restricted Stock that are ultimately forfeited pursuant to Section 4 hereof as a result of a voluntary termination or a termination for Cause (as such term is defined in the Plan) from employment with the Company and its Subsidiaries and Affiliates shall be forfeited coincident with the forfeiture of such Restricted Stock and shall be immediately repaid to the Company.

3. Restrictions on Transfer. Except as otherwise provided in this Agreement, the Participant may not sell, transfer, assign, pledge, encumber or otherwise dispose of any of the shares of Restricted Stock or the rights granted hereunder (any such disposition or encumbrance being referred to herein as a "**Transfer**"). Any Transfer or purported Transfer by the Participant of any of the shares of Restricted Stock shall be null and void and the Company shall not recognize or give effect to such Transfer on its books and records or recognize the person to whom such purported Transfer has been made as the legal or beneficial holder of such shares. The shares of Restricted Stock shall not be subject to sale, execution, pledge, attachment, encumbrance or other process and no person shall be entitled to exercise any rights of the Participant as the holder of such Restricted Stock by virtue of any attempted execution, attachment or other process until the restrictions imposed herein on the Transfer of the shares of Restricted Stock shall lapse as provided in Section 4 hereof. Until the Shares represented hereby vest in accordance with Section 4, the Shares shall be subject to the following restrictive legend:

> THE TRANSFERABILITY OF THE SHARES OF STOCK REPRESENTED HEREBY ARE SUBJECT TO THE RESTRICTIONS, TERMS AND CONDITIONS (INCLUDING FORFEITURE AND RESTRICTIONS AGAINST TRANSFER) CONTAINED IN THE PAR PACIFIC HOLDINGS, INC. 2012 LONG TERM INCENTIVE PLAN AND AN AWARD AGREEMENT ENTERED INTO BETWEEN THE REGISTERED OWNER OF SUCH SHARES AND PAR PACIFIC HOLDINGS, INC. A COPY OF THE PLAN AND AWARD AGREEMENT ARE ON FILE IN THE CORPORATE OFFICES OF PAR PACIFIC HOLDINGS, INC.

4. Lapse of Restrictions and Forfeiture.

(a) The restrictions on transfer imposed on the shares of Restricted Stock by Section 3 and this Section 4 shall lapse with respect to the shares of Restricted Stock and the Participant will vest, or gain actual "ownership" of the shares of Restricted Stock in accordance with the following schedule provided that the Participant has not had a termination of Service for any reason prior to the applicable vesting date:

Vesting Date	Cumulative Vesting Percentage
First anniversary of the Grant Date	25%
Second anniversary of the Grant Date	50%
Third anniversary of the Grant Date	75%
Fourth anniversary of the Grant Date	100%

(b) If the application of the vesting schedule in Section 4(a) would yield a fractional share of Stock, such fractional share shall be rounded down to the next whole share if it is less than 0.5 and rounded up to the next whole share if it is 0.5 or more.

(c) Notwithstanding anything to the contrary in this Section 4, the Award will be 100% vested upon the Participant's termination of employment with the Company and/or its Affiliates due to death or Disability or termination not for Cause (as defined in the Plan).

(d) Notwithstanding anything to the contrary in this Section 4, (x) in the event of a Change in Control in which the resulting entity does not assume, continue, convert or replace this Agreement, the restrictions on transfer imposed by Section 3 on the shares of Restricted Stock shall lapse as of immediately prior to the Change in Control, or (y) in the event of a Change in Control there is an involuntary termination of the Participant's employment for any reason other than Cause (as defined in the Plan) within twenty-four (24) months following the Change in Control, the restrictions on transfer imposed by Section 3 on the shares of Restricted Stock shall lapse. For purposes of this Agreement, the Restricted Stock awarded hereunder will not be considered to be assumed, continued, converted or replaced by the resulting entity in connection with the Change in Control unless (i) the Restricted Stock is adjusted to prevent dilution of the Participant's rights hereunder as a result of the Change in Control, and (ii) immediately after the Change in Control, the Restricted Stock relates to shares of common stock in the resulting entity which are publicly traded and listed on a national securities exchange.

For purposes of this Agreement, a "**Change in Control**" means any of the following events occurring with respect to the Company:

(i) any Person (other than the Company, any trustee or other fiduciary holding securities under any employee benefit plan of the Company, or any company owned, directly or indirectly, by the stockholders of the Company immediately prior to the occurrence with respect to which the evaluation is being made in substantially the same proportions as their ownership of the common stock of the Company) acquires securities of the Company and immediately thereafter is the beneficial owner (except that a Person shall be deemed to be the beneficial owner of all shares that any such Person has the right to acquire pursuant to any agreement or arrangement or upon exercise of conversion rights, warrants or options or otherwise, without regard to the sixty (60)-day period referred to in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing 50% or more of the combined voting power of the Company's then outstanding securities;

(ii) during any period of two consecutive years, individuals who at the beginning of such period constitute the Board, and any new director (other than a director designated by a person who has entered into an agreement with the Company to effect a transaction described in clause (i), (iii), or (iv) of this paragraph) whose election by the Board or nomination for election by the Company's stockholders was approved by a vote of at least a majority of the directors then still in office who either were directors at the beginning of the two-year period or whose election or nomination for election was previously so approved but excluding for this purpose any such new director whose initial assumption of office occurs as a result of either an actual or threatened election contest (as such terms are used in Rule 14a-11 of Regulation 14A promulgated under the Exchange Act) or other actual or threatened solicitation of proxies or consents by or on behalf of an individual, corporation, partnership, group, associate or other entity or Person other than the Board, cease for any reason to constitute at least a majority of the Board;

(iii) the consummation of a merger or consolidation of the Company with any other entity, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving or resulting entity) more than 50% of the combined voting power of the surviving or resulting entity outstanding immediately after such merger or consolidation; or

(iv) the stockholders of the Company approve a plan or agreement for the sale or disposition of all or substantially all of the consolidated assets of the Company (other than such a sale or disposition immediately after which such assets will be owned directly or indirectly by the stockholders of the Company, in substantially the same proportions as their ownership of the common stock of the Company immediately prior to such sale or disposition) in which case the Board shall determine the effective date of the Change in Control resulting therefrom; provided, however, that a transaction described in this clause (iv) shall not be deemed a Change in Control unless and until such transaction is consummated.

5. Adjustment Provisions. In the event of any stock dividend or extraordinary cash dividend, stock split, reverse stock split, recapitalization, combination, reclassification or similar change in the capital structure of the Company, the Committee shall make or cause to be made an appropriate and equitable substitution, adjustment or treatment with respect to the Restricted Stock in accordance with Section 4.2 of the Plan. Any securities, awards or rights issued pursuant to this Section 5 shall be subject to the same restrictions as the underlying Restricted Stock to which they relate.

6. Tax Withholding. As a condition precedent to the receipt of any shares of Restricted Stock hereunder, the Participant agrees to pay to the Company, at such times as the Company shall determine, such amounts as the Company shall deem necessary to satisfy any withholding taxes due on income that the Participant recognizes as a result of (i) the lapse of the restrictions imposed by Section 3 hereof on the shares of Restricted Stock or (ii) the Participant's filing of an election pursuant to Section 83(b) of the Internal Revenue Code of 1986 (the "**Code**"), as amended, with respect to the shares of Restricted Stock. The obligations of the Company under this Agreement and the Plan shall be conditional on such payment or arrangements, and the Company and its Subsidiaries and Affiliates shall, to the extent permitted by law, have the right to deduct any such taxes from any payment otherwise due to the Participant. In addition, the Participant or Company may elect, unless otherwise determined by the Committee, to satisfy the withholding requirement by having the Company withhold shares of vested Restricted Stock with a Fair Market Value, as of the date of such withholding, sufficient to satisfy the withholding obligation.

7. Registration. This grant is subject to the condition that if at any time the Board or Committee shall determine, in its discretion, that the listing of the shares of Stock subject hereto on any securities exchange, or the registration or qualification of such shares under any federal or state law, or the consent or approval of any regulatory body, shall be necessary or desirable as a condition of, or in connection with, the grant, receipt or delivery of shares hereunder, such grant, receipt or delivery will not be effected unless and until such listing, registration, qualification, consent or approval shall have been effected or obtained free of any conditions not acceptable to the Board or Committee. The Company agrees to make every reasonable effort to effect or obtain any such listing, registration, qualification, consent or approval.

8. No Right to Continued Employment or Engagement. In no event shall the granting of the Restricted Stock or the other provisions hereof or the acceptance of the Restricted Stock by the Participant interfere with or limit in any way the right of the Company, a Subsidiary or Affiliate to terminate the Participant's employment or engagement as a Service provider at any time, nor confer upon the Participant any right to continue in the employ or Service of the Company, a Subsidiary or an Affiliate for any period of time or to continue his or her present or any other rate of compensation.

9. Confidential Information, etc. The Participant hereby acknowledges that, during and solely as a result of the Participant's employment by, or engagement as a Service provider with, the Company or its Subsidiaries or Affiliates, the Participant has received and will continue to receive special training and education with respect to the operations of such entity(ies) and

access to confidential information and business and professional contacts, all of which is exceptionally valuable to the Company Group and vital to the success of the Company Group's business and other related matters. In consideration of such special and unique opportunities afforded to the Participant as a result of the Participant's employment or engagement and the grant of Restricted Stock, the Participant hereby agrees to be bound by and acknowledges the reasonableness of the following covenants, which are specifically relied upon by the Company in entering into this Agreement and as a condition to the grant of the Restricted Stock. The Participant acknowledges and agrees that each of the individual provisions of this Section 9 constitutes a separate and distinct obligation of the Participant to the Company Group, individually enforceable against the Participant.

(a) Covenant of Confidentiality. At any time during the term of the Participant's employment with, or engagement to provide Services to, the Company or its Subsidiaries or Affiliates (pursuant to this Agreement or otherwise), and for a period of five (5) years after the termination of the Participant's employment with the Company or its Subsidiaries or Affiliates, as applicable, for any reason, the Participant shall not, except in furtherance of the Business of the Company Group or otherwise with the prior authorization of the Company, in any form or manner, directly or indirectly, divulge, disclose or communicate to any person, entity, firm, corporation or any other third party (other than in the course of the Participant's employment or engagement), or utilize for the Participant's personal benefit or for the benefit of any competitor or customer of the Company Group any Confidential Information. For purposes of this Agreement, "**Confidential Information**" shall mean, but shall not be limited to, any technical or non-technical data, formulae, patterns, compilations, programs, devices, methods, techniques, drawings, designs, processes, procedures, improvements, models or manuals of any member of the Company Group or which are licensed by any member of the Company Group, any financial data or lists of actual or potential customers or suppliers (including contacts thereat) of the Company Group, and any information regarding the contracts, marketing and sales plans, which is not generally known to the public through legitimate origins of the Company Group. The parties hereto each acknowledge and agree that such Confidential Information is extremely valuable to the Company Group and shall be deemed to be a "trade secret." In the event that any part of the Confidential Information becomes generally known to the public through legitimate origins (other than by the breach of this Agreement by the Participant or by misappropriation), or is required to be disclosed by legal, administrative or judicial process (provided that the Participant has provided to the Company reasonable prior notice of such request and the Company has had a reasonable opportunity, at its expense, to dispute, defend or limit such request for the Confidential Information), that part of the Confidential Information shall no longer be deemed Confidential Information for purposes of this Agreement, but the Participant shall continue to be bound by the terms of this Agreement as to all other Confidential Information.

(b) Return of Property. Upon termination of the Participant's employment or engagement to provide Services for any reason, the Participant shall promptly deliver to the Company or its Subsidiaries or Affiliates all correspondence, drawings, blueprints, manuals, letters, notes, notebooks, reports, programs, plans, proposals, financial documents or any other documents, including all copies in any form or media, concerning the Company Group's

Customers, marketing strategies, products or processes which contain any Confidential Information.

(c) Assignment of Inventions. Any and all writings, inventions, improvements, processes, procedures and/or techniques now or hereafter acquired, made, conceived, discovered or developed by the Participant, either solely or jointly with any other person or persons, whether or not during working hours and whether or not at the request or upon the suggestion of the Company or its Subsidiaries or Affiliates, which relate to or are useful in connection with any business now or hereafter carried on or contemplated by the Company Group, including developments or expansions of its present fields of operations, shall be the sole and exclusive property of the Company or its Subsidiaries or Affiliates, as applicable. The Participant shall make full disclosure to the Company or its Subsidiaries or Affiliates of all such writings, inventions, improvements, processes, procedures, techniques, or any other material of a proprietary nature, including, without limitation, any ideas, inventions, discoveries, improvements, developments, designs, methods, systems, computer programs, trade secrets or other intellectual property whether or not patentable or copyrightable and specifically including, but not limited to, copyright and mask works, formulae, compositions, products, processes, apparatus, and new uses of existing materials or machines (collectively, "**Inventions**"), made, conceived or first reduced to practice by the Participant solely or jointly with others while employed by the Company or its Subsidiaries or Affiliates and which relate to or result from the actual or anticipated business, work, research or investigation of the Company Group or which are suggested by or result from any task assigned to or performed by the Participant for the Company Group; and the Participant shall do everything necessary or desirable to vest the absolute title thereto in the Company or its Subsidiaries or Affiliates, as applicable. The Participant shall write and prepare all descriptions, specifications and procedures regarding the Inventions as may be required by the Company or its Subsidiaries or Affiliates to protect the Company's or its Subsidiaries or Affiliates rights in and to the Inventions, and otherwise aid and assist the Company or its Subsidiaries or Affiliates so that the Company or its Subsidiaries or Affiliates can prepare and present applications for copyright or letters patent therefor and can secure such copyright or letters patent wherever possible, as well as reissues, renewals, and extensions thereof, and can obtain the record title to such copyright or patents so that the Company or its Subsidiaries or Affiliates shall be the sole and absolute owner thereof in all countries in which it may desire to have copyright or patent protection. The Participant will, at the Company's or its Subsidiaries or Affiliates request, execute any and all assignment, patent or copyright forms and the like, deemed reasonably necessary by the Company or its Subsidiaries or Affiliate. The Company's or its Subsidiaries or Affiliates rights hereunder shall not be limited to this country but shall extend to any country in the world and shall attach to each Invention notwithstanding that it is perfected, improved, reduced to specific form or used after termination the Participant's employment. The Participant agrees to lend such assistance as he or she may be able, at the Company's or its Subsidiaries or Affiliates request in connection with any proceedings relating to such letters of patent, trade secrets, copyright or application thereof, as may be determined by the Company or its Subsidiaries or Affiliates to be reasonably necessary. The Company, in its sole discretion, may agree to pay the Participant a reasonable fee to defray any costs or time incurred by the Participant in providing such assistance. The Participant shall not be entitled to any additional or special compensation or reimbursement regarding any and all such writings, inventions, improvements, processes, procedures and techniques.

(d) Equitable Remedies. In the event that the Participant breaches any of the terms or conditions set forth in this Section 9, the Participant stipulates that such breach will result in immediate and irreparable harm to the business and goodwill of the Company and/or its Subsidiaries or Affiliates and that damages, if any, and remedies at law for such breach would be inadequate. The Company and/or its Subsidiaries or Affiliates shall therefore be entitled to seek for and receive from any court of competent jurisdiction a temporary restraining order, preliminary and permanent injunctive relief and/or an order for specific performance to protect its rights and interests and to restrain any violation of this Agreement and such further relief as the court may deem just and proper, each without the necessity of posting bond. Following judgment or other final determination by such court, the non-prevailing party in such proceeding shall pay the costs and expenses (including court costs and reasonable attorneys' fees) of the prevailing party. The Company and/or its Subsidiaries or Affiliates may elect to seek such remedies at its sole discretion on a case by case basis. Failure to seek any or all remedies in one case shall not restrict the Company and/or its Subsidiaries or Affiliates from seeking any remedies in another situation. Such action by the Company and/or its Subsidiaries or Affiliates shall not constitute a waiver of any of its rights.

(e) Continuing Obligation. During the Participant's employment or engagement to provide Services and upon termination of the Participant's employment for any reason the obligations, duties and liabilities of the Participant pursuant to Sections 9(a) and 9(b) of this Agreement are continuing, and for the periods set forth in such provisions hereof are absolute and unconditional, and shall survive and remain in full force and effect as provided in each such Section. Notwithstanding anything else contained in this Agreement to the contrary, the parties hereto agree that in the event, and at the moment, the Participant breaches any of the terms, duties or obligations contained in Sections 9(a) and 9(b) of this Agreement, all of the shares of Restricted Stock as to which the restrictions on transfer imposed thereon by Section 3 hereof shall not have lapsed prior to such date will immediately be cancelled and forfeited.

10. Construction.

(a) Successors. This Agreement and all the terms and provisions hereof shall be binding upon and shall inure to the benefit of the parties hereto and their respective legal representatives, heirs and successors, except as expressly herein otherwise provided.

(b) Entire Agreement; Modification. This Agreement contains the entire understanding between the parties with respect to the matters referred to herein. Subject to Section 3.3 of the Plan, this Agreement may be amended by the Committee at any time.

(c) Capitalized Terms; Headings; Pronouns; Governing Law. Capitalized terms used and not otherwise defined herein are deemed to have the same meanings as in the Plan. The descriptive headings of the respective sections and subsections of this Agreement are inserted for convenience of reference only and shall not be deemed to modify or construe the provisions which follow them. Any use of any masculine pronoun shall include the feminine and vice-versa and any use of a singular, the plural and vice-versa, as the context and facts may require. This Agreement shall be interpreted, construed and constructed in accordance with the laws of the State of Delaware without regard to its conflicts of law provisions, except as may be superseded by applicable laws of the United States.

(d) Notices. Each notice relating to this Agreement shall be in writing and shall be sufficiently given if delivered by registered or certified mail, or by a nationally recognized overnight delivery service, with postage or charges prepaid, to the address hereinafter provided in this Section 10. Any such notice or communication given by first-class mail shall be deemed to have been given two business days after the date so mailed, and such notice or communication given by overnight delivery service shall be deemed to have been given one business day after the date so sent, provided such notice or communication arrives at its destination. Each notice to the Company shall be addressed to it at its offices at 825 Town and Country Lane, Suite 1500, Houston, Texas 77024 (attention: Chief Financial Officer), with a copy to the Secretary of the Company or to such other designee of the Company. Each notice to the Participant shall be addressed to the Participant at the Participant's address shown on the signature page hereof.

(e) Severability. Whenever possible, each provision of this Agreement shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement or the application thereof to any party or circumstance shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the minimal extent of such provision or the remaining provisions of this Agreement or the application of such provision to other parties or circumstances.

(f) Counterpart Execution. This Agreement may be executed in counterparts, each of which shall constitute an original and all of which, when taken together, shall constitute the entire document.

PAR PACIFIC HOLDINGS, INC.

By: ________________

____

Exhibit 21.1

SUBSIDIARIES OF THE REGISTRANT

Name	Jurisdiction
Hermes Consolidated, LLC	Delaware
Par Hawaii, LLC	Delaware
Par Hawaii Refining, LLC	Hawaii
Par Hawaii Shared Services, LLC	Delaware
Par Pacific Hawaii Property Company, LLC	Delaware
Par Petroleum Finance Corp.	Delaware
Par Petroleum, LLC	Delaware
Par Piceance Energy Equity, LLC	Delaware
Par Tacoma, LLC	Delaware
U.S. Oil and Refining Co.	Delaware
Wyoming Pipeline Company, LLC	Wyoming
Laramie Energy, LLC (46.0% interest)	Delaware

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-192519, 333-195662, 333-212107, 333-213471, 333-214593, 333-228933, 333-229278 and 333-229528 on Form S-3 and Registration Statement Nos. 333-185612, 333-208575, 333-216518 and 333-225054 on Form S-8 of our reports dated March 2, 2020, relating to the financial statements of Par Pacific Holdings, Inc. and subsidiaries and the effectiveness of Par Pacific Holdings, Inc. and subsidiaries' internal control over financial reporting appearing in this Annual Report on Form 10-K for the year ended December 31, 2019.

/s/ DELOITTE & TOUCHE LLP

Houston, Texas
March 2, 2020

Exhibit 23.2

CONSENT OF INDEPENDENT PETROLEUM ENGINEERS AND GEOLOGISTS

We hereby consent to the inclusion in this Annual Report on Form 10-K of Par Pacific Holdings, Inc. for the year ended December 31, 2019, of our report dated February 25, 2020, with respect to estimates of reserves and future net revenue of Par Pacific Holdings, Inc. ("Par Pacific"), as of December 31, 2019, and to all references to our firm included in this Annual Report. We also hereby consent to the incorporation by reference of the references to our firm, in the context in which they appear, and of our reserves report as of December 31, 2019, and references thereto, into Par Pacific's Registration Statement Nos. 333-185612, 333-208575, 333-216518, and 333-225054 on Form S-8 and Nos. 333-192519, 333-195662, 333-212107, 333-213471, 333-214593, 333-228933, 333-229278, and 333-229528 on Form S-3.

NETHERLAND, SEWELL & ASSOCIATES, INC.

By: /s/ C.H. (Scott) Rees III

C.H. (Scott) Rees III, P.E.
Chairman and Chief Executive Officer

Dallas, Texas
March 2, 2020

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO RULE 13a-14(a)/15d-14(a) PROMULGATED UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, William Pate, certify that:

1. I have reviewed this annual report on Form 10-K of Par Pacific Holdings, Inc.;

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

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

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

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

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

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

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

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

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

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

Date: March 2, 2020

/s/ William Pate

William Pate

President and Chief Executive Officer

Exhibit 31.2

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO RULE 13a-14(a)/15d-14(a) PROMULGATED UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, William Monteleone, certify that:

1. I have reviewed this annual report on Form 10-K of Par Pacific Holdings, Inc.;

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

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

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

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

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

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

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

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

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

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

Date: March 2, 2020

/s/ William Monteleone

William Monteleone
Chief Financial Officer

Exhibit 32.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Par Pacific Holdings, Inc. (the “Company”) on Form 10-K for the period ended December 31, 2019 (the “Report”), as filed with the Securities and Exchange Commission on the date hereof, I, William Pate, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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.

/s/ William Pate

William Pate
President and Chief Executive Officer

March 2, 2020

Exhibit 32.2

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Par Pacific Holdings, Inc. (the “Company”) on Form 10-K for the period ended December 31, 2019 (the “Report”), as filed with the Securities and Exchange Commission on the date hereof, I, William Monteleone, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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.

/s/ William Monteleone

William Monteleone
Chief Financial Officer

March 2, 2020

February 25, 2020

Mr. Will Monteleone
Par Pacific Holdings, Inc.
825 Town & Country Lane, Suite 1500
Houston, Texas 77024

Dear Mr. Monteleone:

In accordance with your request, we have estimated the proved developed producing reserves and future revenue, as of December 31, 2019, to the Par Pacific Holdings, Inc. (Par) interest in certain gas properties located in the Piceance Basin of Colorado. We completed our evaluation on or about the date of this letter. It is our understanding that the proved reserves estimated in this report constitute all of the proved reserves owned by Par. The estimates in this report have been prepared in accordance with the definitions and regulations of the U.S. Securities and Exchange Commission (SEC) and, with the exception of the exclusion of future income taxes, conform to the FASB Accounting Standards Codification Topic 932, Extractive Activities—Oil and Gas. Definitions are presented immediately following this letter. This report has been prepared for Par's use in filing with the SEC; in our opinion the assumptions, data, methods, and procedures used in the preparation of this report are appropriate for such purpose.

We estimate the net reserves and future net revenue to the Par interest in these properties, as of December 31, 2019, to be:

	Net Reserves			Future Net Revenue (M$)	
Category	Gas (MMCF)	NGL (MBBL)	Condensate (MBBL)	Total	Present Worth at 10%
Proved Developed Producing	238,450.9	5,421.2	939.1	246,087.5	140,015.7

Gas volumes are expressed in millions of cubic feet (MMCF) at standard temperature and pressure bases. Natural gas liquids (NGL) and condensate volumes are expressed in thousands of barrels (MBBL); a barrel is equivalent to 42 United States gallons.

Reserves categorization conveys the relative degree of certainty; reserves subcategorization is based on development and production status. Our study indicates that as of December 31, 2019, there are no proved developed non-producing reserves for these properties. Due to the lack of commitment to additional development, there are also no proved undeveloped reserves for these properties as of December 31, 2019. As requested, probable and possible reserves that exist for these properties have not been included. The estimates of reserves and future revenue included herein have not been adjusted for risk. This report does not include any value that could be attributed to interests in undeveloped acreage.

Gross revenue is Par's share of the gross (100 percent) revenue from the properties prior to any deductions. Future net revenue is after deductions for Par's share of production taxes, ad valorem taxes, abandonment costs, and operating expenses but before consideration of any income taxes. The future net revenue has been discounted at an annual rate of 10 percent to determine its present worth, which is shown to indicate the effect of time on the value of money. Future net revenue presented in this report, whether discounted or undiscounted, should not be construed as being the fair market value of the properties.

Prices used in this report are based on the 12-month unweighted arithmetic average of the first-day-of-the-month price for each month in the period January through December 2019. For gas volumes, the average CIG Rocky

Mountains spot price of $2.044 per MMBTU is adjusted for energy content, transportation fees, and market differentials. For NGL and condensate volumes, the average West Texas Intermediate spot price of $55.85 per barrel is adjusted for quality, transportation fees, and market differentials. For the properties in the Summit gathering area, the fees associated with the Laramie Energy, LLC (Laramie) TransColorado firm transportation contract are included as a deduction to gas revenue. All prices are held constant throughout the lives of the properties. The average adjusted product prices weighted by production over the remaining lives of the properties are $2.220 per MCF of gas, $16.98 per barrel of NGL, and $51.83 per barrel of condensate.

Operating costs used in this report are based on operating expense records of Laramie, the operator of most of the properties. These costs include the per-well overhead expenses allowed under joint operating agreements along with estimates of costs to be incurred at and below the district and field levels. Operating costs have been divided into field-level costs, per-well costs, and per-unit-of-production costs. Since all properties are nonoperated, headquarters general and administrative overhead expenses of Par are not included. An economic projection is included to account for demand fees associated with the current terms of the ETC Canyon Pipeline, LLC Gathering Agreement for the properties in the Summit gathering area. For all other areas, we have made no specific investigation of any firm transportation contracts that may be in place and our estimates of future revenue include the effects of such contracts only to the extent that the associated fees are accounted for in the historical field- and lease-level accounting statements. Operating costs are not escalated for inflation.

Abandonment costs used in this report are Laramie's estimates of the costs to abandon the wells and production facilities, net of any salvage value. Abandonment costs are not escalated for inflation.

For the purposes of this report, we did not perform any field inspection of the properties, nor did we examine the mechanical operation or condition of the wells and facilities. We have not investigated possible environmental liability related to the properties; therefore, our estimates do not include any costs due to such possible liability.

We have made no investigation of potential volume and value imbalances resulting from overdelivery or underdelivery to the Par interest. Therefore, our estimates of reserves and future revenue do not include adjustments for the settlement of any such imbalances; our projections are based on Par receiving its net revenue interest share of estimated future gross production.

The reserves shown in this report are estimates only and should not be construed as exact quantities. Proved reserves are those quantities of oil and gas which, by analysis of engineering and geoscience data, can be estimated with reasonable certainty to be economically producible; probable and possible reserves are those additional reserves which are sequentially less certain to be recovered than proved reserves. Estimates of reserves may increase or decrease as a result of market conditions, future operations, changes in regulations, or actual reservoir performance. In addition to the primary economic assumptions discussed herein, our estimates are based on certain assumptions including, but not limited to, that the properties will be developed consistent with current development plans as provided to us by Par and Laramie, that the properties will be operated in a prudent manner, that no governmental regulations or controls will be put in place that would impact the ability of the interest owner to recover the reserves, and that our projections of future production will prove consistent with actual performance. If the reserves are recovered, the revenues therefrom and the costs related thereto could be more or less than the estimated amounts. Because of governmental policies and uncertainties of supply and demand, the sales rates, prices received for the reserves, and costs incurred in recovering such reserves may vary from assumptions made while preparing this report.

For the purposes of this report, we used technical and economic data including, but not limited to, well logs, geologic maps, well test data, production data, historical price and cost information, and property ownership interests. The reserves in this report have been estimated using deterministic methods; these estimates have been prepared in accordance with the Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information promulgated by the Society of Petroleum Engineers (SPE Standards). We used standard engineering and geoscience methods, or a combination of methods, including performance analysis and analogy, that we considered to be appropriate and necessary to categorize and estimate reserves in accordance with SEC definitions and regulations.

As in all aspects of oil and gas evaluation, there are uncertainties inherent in the interpretation of engineering and geoscience data; therefore, our conclusions necessarily represent only informed professional judgment.

The data used in our estimates were obtained from Par, Laramie, public data sources, and the nonconfidential files of Netherland, Sewell & Associates, Inc. (NSAI) and were accepted as accurate. Supporting work data are on file in our office. We have not examined the titles to the properties or independently confirmed the actual degree or type of interest owned. The technical persons primarily responsible for preparing the estimates presented herein meet the requirements regarding qualifications, independence, objectivity, and confidentiality set forth in the SPE Standards. Benjamin W. Johnson, a Licensed Professional Engineer in the State of Texas, has been practicing consulting petroleum engineering at NSAI since 2007 and has over 2 years of prior industry experience. John G. Hattner, a Licensed Professional Geoscientist in the State of Texas, has been practicing consulting petroleum geoscience at NSAI since 1991 and has over 11 years of prior industry experience. We are independent petroleum engineers, geologists, geophysicists, and petrophysicists; we do not own an interest in these properties nor are we employed on a contingent basis.

Sincerely,

NETHERLAND, SEWELL & ASSOCIATES, INC.
Texas Registered Engineering Firm F-2699

By: /s/ C.H. (Scott) Rees III
C.H. (Scott) Rees III, P.E.
Chairman and Chief Executive Officer

By: /s/ Benjamin W. Johnson
Benjamin W. Johnson, P.E. 124738
Vice President

Date Signed: February 25, 2020

By: /s/ John G. Hattner
John G. Hattner, P.G. 559
Senior Vice President

Date Signed: February 25, 2020

BWJ:BWY

DEFINITIONS OF OIL AND GAS RESERVES

Adapted from U.S. Securities and Exchange Commission Regulation S-X Section 210.4-10(a)

The following definitions are set forth in U.S. Securities and Exchange Commission (SEC) Regulation S-X Section 210.4-10(a). Also included is supplemental information from (1) the 2018 Petroleum Resources Management System approved by the Society of Petroleum Engineers, (2) the FASB Accounting Standards Codification Topic 932, Extractive Activities—Oil and Gas, and (3) the SEC's Compliance and Disclosure Interpretations.

(1) *Acquisition of properties*. Costs incurred to purchase, lease or otherwise acquire a property, including costs of lease bonuses and options to purchase or lease properties, the portion of costs applicable to minerals when land including mineral rights is purchased in fee, brokers' fees, recording fees, legal costs, and other costs incurred in acquiring properties.

(2) *Analogous reservoir*. Analogous reservoirs, as used in resources assessments, have similar rock and fluid properties, reservoir conditions (depth, temperature, and pressure) and drive mechanisms, but are typically at a more advanced stage of development than the reservoir of interest and thus may provide concepts to assist in the interpretation of more limited data and estimation of recovery. When used to support proved reserves, an "analogous reservoir" refers to a reservoir that shares the following characteristics with the reservoir of interest:

- (i) Same geological formation (but not necessarily in pressure communication with the reservoir of interest);
- (ii) Same environment of deposition;
- (iii) Similar geological structure; and
- (iv) Same drive mechanism.

Instruction to paragraph (a)(2): Reservoir properties must, in the aggregate, be no more favorable in the analog than in the reservoir of interest.

(3) *Bitumen*. Bitumen, sometimes referred to as natural bitumen, is petroleum in a solid or semi-solid state in natural deposits with a viscosity greater than 10,000 centipoise measured at original temperature in the deposit and atmospheric pressure, on a gas free basis. In its natural state it usually contains sulfur, metals, and other non-hydrocarbons.

(4) *Condensate*. Condensate is a mixture of hydrocarbons that exists in the gaseous phase at original reservoir temperature and pressure, but that, when produced, is in the liquid phase at surface pressure and temperature.

(5) *Deterministic estimate*. The method of estimating reserves or resources is called deterministic when a single value for each parameter (from the geoscience, engineering, or economic data) in the reserves calculation is used in the reserves estimation procedure.

(6) *Developed oil and gas reserves*. Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

- (i) Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and
- (ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

Supplemental definitions from the 2018 Petroleum Resources Management System:

Developed Producing Reserves – Expected quantities to be recovered from completion intervals that are open and producing at the effective date of the estimate. Improved recovery Reserves are considered producing only after the improved recovery project is in operation.

Developed Non-Producing Reserves – Shut-in and behind-pipe Reserves. Shut-in Reserves are expected to be recovered from (1) completion intervals that are open at the time of the estimate but which have not yet started producing, (2) wells which were shut-in for market conditions or pipeline connections, or (3) wells not capable of production for mechanical reasons. Behind-pipe Reserves are expected to be recovered from zones in existing wells that will require additional completion work or future re-completion before start of production with minor cost to access these reserves. In all cases, production can be initiated or restored with relatively low expenditure compared to the cost of drilling a new well.

(7) *Development costs.* Costs incurred to obtain access to proved reserves and to provide facilities for extracting, treating, gathering and storing the oil and gas. More specifically, development costs, including depreciation and applicable operating costs of support equipment and facilities and other costs of development activities, are costs incurred to:

- (i) Gain access to and prepare well locations for drilling, including surveying well locations for the purpose of determining specific development drilling sites, clearing ground, draining, road building, and relocating public roads, gas lines, and power lines, to the extent necessary in developing the proved reserves.
- (ii) Drill and equip development wells, development-type stratigraphic test wells, and service wells, including the costs of platforms and of well equipment such as casing, tubing, pumping equipment, and the wellhead assembly.

DEFINITIONS OF OIL AND GAS RESERVES

Adapted from U.S. Securities and Exchange Commission Regulation S-X Section 210.4-10(a)

(iii) Acquire, construct, and install production facilities such as lease flow lines, separators, treaters, heaters, manifolds, measuring devices, and production storage tanks, natural gas cycling and processing plants, and central utility and waste disposal systems.
(iv) Provide improved recovery systems.

(8) *Development project*. A development project is the means by which petroleum resources are brought to the status of economically producible. As examples, the development of a single reservoir or field, an incremental development in a producing field, or the integrated development of a group of several fields and associated facilities with a common ownership may constitute a development project.

(9) *Development well*. A well drilled within the proved area of an oil or gas reservoir to the depth of a stratigraphic horizon known to be productive.

(10) *Economically producible*. The term economically producible, as it relates to a resource, means a resource which generates revenue that exceeds, or is reasonably expected to exceed, the costs of the operation. The value of the products that generate revenue shall be determined at the terminal point of oil and gas producing activities as defined in paragraph (a)(16) of this section.

(11) *Estimated ultimate recovery (EUR)*. Estimated ultimate recovery is the sum of reserves remaining as of a given date and cumulative production as of that date.

(12) *Exploration costs*. Costs incurred in identifying areas that may warrant examination and in examining specific areas that are considered to have prospects of containing oil and gas reserves, including costs of drilling exploratory wells and exploratory-type stratigraphic test wells. Exploration costs may be incurred both before acquiring the related property (sometimes referred to in part as prospecting costs) and after acquiring the property. Principal types of exploration costs, which include depreciation and applicable operating costs of support equipment and facilities and other costs of exploration activities, are:

(i) Costs of topographical, geographical and geophysical studies, rights of access to properties to conduct those studies, and salaries and other expenses of geologists, geophysical crews, and others conducting those studies. Collectively, these are sometimes referred to as geological and geophysical or "G&G" costs.
(ii) Costs of carrying and retaining undeveloped properties, such as delay rentals, ad valorem taxes on properties, legal costs for title defense, and the maintenance of land and lease records.
(iii) Dry hole contributions and bottom hole contributions.
(iv) Costs of drilling and equipping exploratory wells.
(v) Costs of drilling exploratory-type stratigraphic test wells.

(13) *Exploratory well*. An exploratory well is a well drilled to find a new field or to find a new reservoir in a field previously found to be productive of oil or gas in another reservoir. Generally, an exploratory well is any well that is not a development well, an extension well, a service well, or a stratigraphic test well as those items are defined in this section.

(14) *Extension well*. An extension well is a well drilled to extend the limits of a known reservoir.

(15) *Field*. An area consisting of a single reservoir or multiple reservoirs all grouped on or related to the same individual geological structural feature and/or stratigraphic condition. There may be two or more reservoirs in a field which are separated vertically by intervening impervious strata, or laterally by local geologic barriers, or by both. Reservoirs that are associated by being in overlapping or adjacent fields may be treated as a single or common operational field. The geological terms "structural feature" and "stratigraphic condition" are intended to identify localized geological features as opposed to the broader terms of basins, trends, provinces, plays, areas-of-interest, etc.

(16) *Oil and gas producing activities*.

(i) Oil and gas producing activities include:

(A) The search for crude oil, including condensate and natural gas liquids, or natural gas ("oil and gas") in their natural states and original locations;
(B) The acquisition of property rights or properties for the purpose of further exploration or for the purpose of removing the oil or gas from such properties;
(C) The construction, drilling, and production activities necessary to retrieve oil and gas from their natural reservoirs, including the acquisition, construction, installation, and maintenance of field gathering and storage systems, such as:
(1) Lifting the oil and gas to the surface; and
(2) Gathering, treating, and field processing (as in the case of processing gas to extract liquid hydrocarbons); and

DEFINITIONS OF OIL AND GAS RESERVES

Adapted from U.S. Securities and Exchange Commission Regulation S-X Section 210.4-10(a)

(D) Extraction of saleable hydrocarbons, in the solid, liquid, or gaseous state, from oil sands, shale, coalbeds, or other nonrenewable natural resources which are intended to be upgraded into synthetic oil or gas, and activities undertaken with a view to such extraction.

Instruction 1 to paragraph (a)(16)(i): The oil and gas production function shall be regarded as ending at a "terminal point", which is the outlet valve on the lease or field storage tank. If unusual physical or operational circumstances exist, it may be appropriate to regard the terminal point for the production function as:

a. The first point at which oil, gas, or gas liquids, natural or synthetic, are delivered to a main pipeline, a common carrier, a refinery, or a marine terminal; and
b. In the case of natural resources that are intended to be upgraded into synthetic oil or gas, if those natural resources are delivered to a purchaser prior to upgrading, the first point at which the natural resources are delivered to a main pipeline, a common carrier, a refinery, a marine terminal, or a facility which upgrades such natural resources into synthetic oil or gas.

Instruction 2 to paragraph (a)(16)(i): For purposes of this paragraph (a)(16), the term *saleable hydrocarbons* means hydrocarbons that are saleable in the state in which the hydrocarbons are delivered.

(ii) Oil and gas producing activities do not include:

(A) Transporting, refining, or marketing oil and gas;
(B) Processing of produced oil, gas, or natural resources that can be upgraded into synthetic oil or gas by a registrant that does not have the legal right to produce or a revenue interest in such production;
(C) Activities relating to the production of natural resources other than oil, gas, or natural resources from which synthetic oil and gas can be extracted; or
(D) Production of geothermal steam.

(17) *Possible reserves.* Possible reserves are those additional reserves that are less certain to be recovered than probable reserves.

(i) When deterministic methods are used, the total quantities ultimately recovered from a project have a low probability of exceeding proved plus probable plus possible reserves. When probabilistic methods are used, there should be at least a 10% probability that the total quantities ultimately recovered will equal or exceed the proved plus probable plus possible reserves estimates.
(ii) Possible reserves may be assigned to areas of a reservoir adjacent to probable reserves where data control and interpretations of available data are progressively less certain. Frequently, this will be in areas where geoscience and engineering data are unable to define clearly the area and vertical limits of commercial production from the reservoir by a defined project.
(iii) Possible reserves also include incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than the recovery quantities assumed for probable reserves.
(iv) The proved plus probable and proved plus probable plus possible reserves estimates must be based on reasonable alternative technical and commercial interpretations within the reservoir or subject project that are clearly documented, including comparisons to results in successful similar projects.
(v) Possible reserves may be assigned where geoscience and engineering data identify directly adjacent portions of a reservoir within the same accumulation that may be separated from proved areas by faults with displacement less than formation thickness or other geological discontinuities and that have not been penetrated by a wellbore, and the registrant believes that such adjacent portions are in communication with the known (proved) reservoir. Possible reserves may be assigned to areas that are structurally higher or lower than the proved area if these areas are in communication with the proved reservoir.
(vi) Pursuant to paragraph (a)(22)(iii) of this section, where direct observation has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves should be assigned in the structurally higher portions of the reservoir above the HKO only if the higher contact can be established with reasonable certainty through reliable technology. Portions of the reservoir that do not meet this reasonable certainty criterion may be assigned as probable and possible oil or gas based on reservoir fluid properties and pressure gradient interpretations.

(18) *Probable reserves.* Probable reserves are those additional reserves that are less certain to be recovered than proved reserves but which, together with proved reserves, are as likely as not to be recovered.

(i) When deterministic methods are used, it is as likely as not that actual remaining quantities recovered will exceed the sum of estimated proved plus probable reserves. When probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the proved plus probable reserves estimates.

DEFINITIONS OF OIL AND GAS RESERVES

Adapted from U.S. Securities and Exchange Commission Regulation S-X Section 210.4-10(a)

- (ii) Probable reserves may be assigned to areas of a reservoir adjacent to proved reserves where data control or interpretations of available data are less certain, even if the interpreted reservoir continuity of structure or productivity does not meet the reasonable certainty criterion. Probable reserves may be assigned to areas that are structurally higher than the proved area if these areas are in communication with the proved reservoir.
- (iii) Probable reserves estimates also include potential incremental quantities associated with a greater percentage recovery of the hydrocarbons in place than assumed for proved reserves.
- (iv) See also guidelines in paragraphs (a)(17)(iv) and (a)(17)(vi) of this section.

(19) *Probabilistic estimate.* The method of estimation of reserves or resources is called probabilistic when the full range of values that could reasonably occur for each unknown parameter (from the geoscience and engineering data) is used to generate a full range of possible outcomes and their associated probabilities of occurrence.

(20) *Production costs*.

- (i) Costs incurred to operate and maintain wells and related equipment and facilities, including depreciation and applicable operating costs of support equipment and facilities and other costs of operating and maintaining those wells and related equipment and facilities. They become part of the cost of oil and gas produced. Examples of production costs (sometimes called lifting costs) are:
  - (A) Costs of labor to operate the wells and related equipment and facilities.
  - (B) Repairs and maintenance.
  - (C) Materials, supplies, and fuel consumed and supplies utilized in operating the wells and related equipment and facilities.
  - (D) Property taxes and insurance applicable to proved properties and wells and related equipment and facilities.
  - (E) Severance taxes.
- (ii) Some support equipment or facilities may serve two or more oil and gas producing activities and may also serve transportation, refining, and marketing activities. To the extent that the support equipment and facilities are used in oil and gas producing activities, their depreciation and applicable operating costs become exploration, development or production costs, as appropriate. Depreciation, depletion, and amortization of capitalized acquisition, exploration, and development costs are not production costs but also become part of the cost of oil and gas produced along with production (lifting) costs identified above.

(21) *Proved area.* The part of a property to which proved reserves have been specifically attributed.

(22) *Proved oil and gas reserves.* Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

- (i) The area of the reservoir considered as proved includes:
  - (A) The area identified by drilling and limited by fluid contacts, if any, and
  - (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.
- (ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience, engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.
- (iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.
- (iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:
  - (A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and

DEFINITIONS OF OIL AND GAS RESERVES

Adapted from U.S. Securities and Exchange Commission Regulation S-X Section 210.4-10(a)

(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

(23) *Proved properties.* Properties with proved reserves.

(24) *Reasonable certainty.* If deterministic methods are used, reasonable certainty means a high degree of confidence that the quantities will be recovered. If probabilistic methods are used, there should be at least a 90% probability that the quantities actually recovered will equal or exceed the estimate. A high degree of confidence exists if the quantity is much more likely to be achieved than not, and, as changes due to increased availability of geoscience (geological, geophysical, and geochemical), engineering, and economic data are made to estimated ultimate recovery (EUR) with time, reasonably certain EUR is much more likely to increase or remain constant than to decrease.

(25) *Reliable technology.* Reliable technology is a grouping of one or more technologies (including computational methods) that has been field tested and has been demonstrated to provide reasonably certain results with consistency and repeatability in the formation being evaluated or in an analogous formation.

(26) *Reserves.* Reserves are estimated remaining quantities of oil and gas and related substances anticipated to be economically producible, as of a given date, by application of development projects to known accumulations. In addition, there must exist, or there must be a reasonable expectation that there will exist, the legal right to produce or a revenue interest in the production, installed means of delivering oil and gas or related substances to market, and all permits and financing required to implement the project.

Note to paragraph (a)(26): Reserves should not be assigned to adjacent reservoirs isolated by major, potentially sealing, faults until those reservoirs are penetrated and evaluated as economically producible. Reserves should not be assigned to areas that are clearly separated from a known accumulation by a non-productive reservoir (i.e., absence of reservoir, structurally low reservoir, or negative test results). Such areas may contain prospective resources (i.e., potentially recoverable resources from undiscovered accumulations).

Excerpted from the FASB Accounting Standards Codification Topic 932, Extractive Activities—Oil and Gas:

932-235-50-30 A standardized measure of discounted future net cash flows relating to an entity's interests in both of the following shall be disclosed as of the end of the year:

a. *Proved oil and gas reserves (see paragraphs 932-235-50-3 through 50-11B)*
b. *Oil and gas subject to purchase under long-term supply, purchase, or similar agreements and contracts in which the entity participates in the operation of the properties on which the oil or gas is located or otherwise serves as the producer of those reserves (see paragraph 932-235-50-7).*

The standardized measure of discounted future net cash flows relating to those two types of interests in reserves may be combined for reporting purposes.

932-235-50-31 All of the following information shall be disclosed in the aggregate and for each geographic area for which reserve quantities are disclosed in accordance with paragraphs 932-235-50-3 through 50-11B:

a. *Future cash inflows. These shall be computed by applying prices used in estimating the entity's proved oil and gas reserves to the year-end quantities of those reserves. Future price changes shall be considered only to the extent provided by contractual arrangements in existence at year-end.*
b. *Future development and production costs. These costs shall be computed by estimating the expenditures to be incurred in developing and producing the proved oil and gas reserves at the end of the year, based on year-end costs and assuming continuation of existing economic conditions. If estimated development expenditures are significant, they shall be presented separately from estimated production costs.*
c. *Future income tax expenses. These expenses shall be computed by applying the appropriate year-end statutory tax rates, with consideration of future tax rates already legislated, to the future pretax net cash flows relating to the entity's proved oil and gas reserves, less the tax basis of the properties involved. The future income tax expenses shall give effect to tax deductions and tax credits and allowances relating to the entity's proved oil and gas reserves.*
d. *Future net cash flows. These amounts are the result of subtracting future development and production costs and future income tax expenses from future cash inflows.*

DEFINITIONS OF OIL AND GAS RESERVES

Adapted from U.S. Securities and Exchange Commission Regulation S-X Section 210.4-10(a)

e. Discount. This amount shall be derived from using a discount rate of 10 percent a year to reflect the timing of the future net cash flows relating to proved oil and gas reserves.

f. Standardized measure of discounted future net cash flows. This amount is the future net cash flows less the computed discount.

(27) *Reservoir.* A porous and permeable underground formation containing a natural accumulation of producible oil and/or gas that is confined by impermeable rock or water barriers and is individual and separate from other reservoirs.

(28) *Resources.* Resources are quantities of oil and gas estimated to exist in naturally occurring accumulations. A portion of the resources may be estimated to be recoverable, and another portion may be considered to be unrecoverable. Resources include both discovered and undiscovered accumulations.

(29) *Service well.* A well drilled or completed for the purpose of supporting production in an existing field. Specific purposes of service wells include gas injection, water injection, steam injection, air injection, salt-water disposal, water supply for injection, observation, or injection for in-situ combustion.

(30) *Stratigraphic test well.* A stratigraphic test well is a drilling effort, geologically directed, to obtain information pertaining to a specific geologic condition. Such wells customarily are drilled without the intent of being completed for hydrocarbon production. The classification also includes tests identified as core tests and all types of expendable holes related to hydrocarbon exploration. Stratigraphic tests are classified as "exploratory type" if not drilled in a known area or "development type" if drilled in a known area.

(31) *Undeveloped oil and gas reserves.* Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances, justify a longer time.

From the SEC's Compliance and Disclosure Interpretations (October 26, 2009):

Although several types of projects — such as constructing offshore platforms and development in urban areas, remote locations or environmentally sensitive locations — by their nature customarily take a longer time to develop and therefore often do justify longer time periods, this determination must always take into consideration all of the facts and circumstances. No particular type of project per se justifies a longer time period, and any extension beyond five years should be the exception, and not the rule.

Factors that a company should consider in determining whether or not circumstances justify recognizing reserves even though development may extend past five years include, but are not limited to, the following:

- *The company's level of ongoing significant development activities in the area to be developed (for example, drilling only the minimum number of wells necessary to maintain the lease generally would not constitute significant development activities);*
- *The company's historical record at completing development of comparable long-term projects;*
- *The amount of time in which the company has maintained the leases, or booked the reserves, without significant development activities;*
- *The extent to which the company has followed a previously adopted development plan (for example, if a company has changed its development plan several times without taking significant steps to implement any of those plans, recognizing proved undeveloped reserves typically would not be appropriate); and*
- *The extent to which delays in development are caused by external factors related to the physical operating environment (for example, restrictions on development on Federal lands, but not obtaining government permits), rather than by internal factors (for example, shifting resources to develop properties with higher priority).*

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, as defined in paragraph (a)(2) of this section, or by other evidence using reliable technology establishing reasonable certainty.

(32) *Unproved properties.* Properties with no proved reserves.