

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

FORM 10-Q

Quarterly Report Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934

For the Quarterly Period Ended March 31, 2020

Commission File Number 001-32924

GREEN PLAINS INC.

(Exact name of registrant as specified in its charter)

Iowa

(State or other jurisdiction of incorporation or organization)

84-1652107

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

1811 Aksarben Drive, Omaha, NE 68106

(Address of principal executive offices, including zip code)

(402) 884-8700

(Registrant's telephone number, including area code)

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

<u>Title of each class</u>	<u>Trading Symbol</u>	<u>Name of each exchange on which registered</u>
Common Stock, par value \$0.001 per share	GPPE	The Nasdaq Stock Market LLC

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes No

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

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

The number of shares of common stock, par value \$0.001 per share, outstanding as of May 1, 2020, was 35,494,087 shares.

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Commonly Used Defined Terms

The abbreviations, acronyms and industry terminology used in this quarterly report are defined as follows:

Green Plains Inc., Subsidiaries, and Partners:

Green Plains; the company	Green Plains Inc. and its subsidiaries
BioProcess Algae	BioProcess Algae LLC
Green Plains Cattle; GPCC	Green Plains Cattle Company LLC
Green Plains Grain	Green Plains Grain Company LLC
Green Plains Partners; the partnership	Green Plains Partners LP
Green Plains Trade	Green Plains Trade Group LLC

Accounting Defined Terms:

ASC	Accounting Standards Codification
Bgy	Billion gallons per year
EBITDA	Earnings before interest, income taxes, depreciation and amortization
EPS	Earnings per share
Exchange Act	Securities Exchange Act of 1934, as amended
GAAP	U.S. Generally Accepted Accounting Principles
LIBOR	London Interbank Offered Rate
LTIP	Long-Term Incentive Plan
R&D Credits	Research and development tax credits
SEC	Securities and Exchange Commission

Industry and Other Defined Terms:

CAFE	Corporate Average Fuel Economy
the CARES Act	Coronavirus Aid, Relief, and Economic Security Act
COVID-19	Coronavirus Disease 2019
D.C.	District of Columbia
E10	Gasoline blended with up to 10% ethanol by volume
E15	Gasoline blended with up to 15% ethanol by volume
E85	Gasoline blended with up to 85% ethanol by volume
EIA	U.S. Energy Information Administration
EPA	U.S. Environmental Protection Agency
GATT	General Agreement on Tariffs and Trade
MmBtu	Million British Thermal Units
Mmg	Million gallons
MTBE	Methyl tertiary-butyl ether
MVC	Minimum volume commitment
RFS II	Renewable Fuels Standard II
RIN	Renewable identification number
RVO	Renewable volume obligation
U.S.	United States
USDA	U.S. Department of Agriculture
WTO	World Trade Organization

Item 1. Financial Statements.

PART 1 – FINANCIAL INFORMATION
GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(in thousands, except share amounts)

	March 31, 2020 (unaudited)	December 31, 2019
ASSETS		
Current assets		
Cash and cash equivalents	\$ 194,333	\$ 245,977
Restricted cash	11,191	23,919
Accounts receivable, net of allowances of \$196 and \$166, respectively	34,447	107,183
Income taxes receivable	42,367	6,216
Inventories	214,336	252,992
Prepaid expenses and other	12,550	13,685
Derivative financial instruments	57,161	17,941
Total current assets	566,385	667,913
Property and equipment, net of accumulated depreciation and amortization of \$504,325 and \$486,677, respectively	843,466	827,271
Operating lease right-of-use assets	53,909	52,476
Investment in equity method investees	131,113	68,998
Other assets	43,225	81,560
Total assets	<u>\$ 1,638,098</u>	<u>\$ 1,698,218</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	\$ 96,053	\$ 156,693
Accrued and other liabilities	35,637	39,384
Derivative financial instruments	15,589	8,721
Operating lease current liabilities	16,094	16,626
Short-term notes payable and other borrowings	167,043	187,812
Current maturities of long-term debt	130,785	132,555
Total current liabilities	461,201	541,791
Long-term debt	247,210	243,990
Operating lease long-term liabilities	40,383	38,314
Other liabilities	9,224	8,837
Total liabilities	758,018	832,932
Commitments and contingencies (Note 14)		
Stockholders' equity		
Common stock, \$0.001 par value; 75,000,000 shares authorized; 47,307,248 and 46,964,115 shares issued, and 35,494,087 and 36,031,933 shares outstanding, respectively	47	47
Additional paid-in capital	734,616	734,580
Retained earnings	131,705	148,150
Accumulated other comprehensive income (loss)	30,939	(11,064)
Treasury stock, 11,813,161 and 10,932,182 shares, respectively	(131,287)	(119,808)
Total Green Plains stockholders' equity	766,020	751,905
Noncontrolling interests	114,060	113,381
Total stockholders' equity	880,080	865,286
Total liabilities and stockholders' equity	<u>\$ 1,638,098</u>	<u>\$ 1,698,218</u>

See accompanying notes to the consolidated financial statements.

GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(unaudited and in thousands, except per share amounts)

	Three Months Ended March 31,	
	2020	2019
Revenues		
Product revenues	\$ 631,581	\$ 436,336
Service revenues	1,288	2,305
Total revenues	<u>632,869</u>	<u>438,641</u>
Costs and expenses		
Cost of goods sold (excluding depreciation and amortization expenses reflected below)	617,228	434,391
Operations and maintenance expenses	6,160	6,864
Selling, general and administrative expenses	21,638	18,400
Goodwill impairment	24,091	-
Depreciation and amortization expenses	18,080	17,624
Total costs and expenses	<u>687,197</u>	<u>477,279</u>
Operating loss from continuing operations	<u>(54,328)</u>	<u>(38,638)</u>
Other income (expense)		
Interest income	593	1,186
Interest expense	(9,697)	(9,731)
Other, net	836	912
Total other expense	<u>(8,268)</u>	<u>(7,633)</u>
Loss from continuing operations before income taxes and income (loss) from equity method investees	(62,596)	(46,271)
Income tax benefit	44,283	12,943
Income (loss) from equity method investees, net of income taxes	7,966	(74)
Net loss from continuing operations including noncontrolling interest	<u>(10,347)</u>	<u>(33,402)</u>
Net loss from discontinued operations, net of income taxes	-	(4,469)
Net loss	<u>(10,347)</u>	<u>(37,871)</u>
Net income attributable to noncontrolling interests	6,098	4,928
Net loss attributable to Green Plains	<u>\$ (16,445)</u>	<u>\$ (42,799)</u>
Earnings per share - basic and diluted		
Net loss from continuing operations	\$ (0.47)	\$ (0.95)
Net loss from discontinued operations	-	(0.11)
Net loss attributable to Green Plains	<u>\$ (0.47)</u>	<u>\$ (1.06)</u>
Weighted average shares outstanding:		
Basic	<u>34,665</u>	<u>40,315</u>
Diluted	<u>34,665</u>	<u>40,315</u>

See accompanying notes to the consolidated financial statements.

GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(unaudited and in thousands)

	Three Months Ended	
	March 31,	
	2020	2019
Net loss	\$ (10,347)	\$ (37,871)
Other comprehensive income (loss), net of tax:		
Unrealized gains (losses) on derivatives arising during the period, net of tax benefit (expense) of (\$1,447) and \$2,080, respectively	4,532	(6,883)
Reclassification of realized losses (gains) on derivatives, net of tax expense (benefit) of \$1,432 and (\$3,140), respectively	(4,485)	10,376
Other comprehensive income (loss), net of tax	47	3,493
Share of equity method investees other comprehensive income arising during the period, net of tax expense of \$13,359, and \$0, respectively	41,956	-
Total other comprehensive income, net of tax	42,003	3,493
Comprehensive income (loss) attributable to Green Plains	31,656	(34,378)
Comprehensive income attributable to noncontrolling interests	6,098	4,928
Comprehensive income (loss) attributable to Green Plains	<u>\$ 25,558</u>	<u>\$ (39,306)</u>

See accompanying notes to the consolidated financial statements.

GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(unaudited and in thousands)

	Three Months Ended March 31,	
	2020	2019
Cash flows from operating activities:		
Net loss from continuing operations including noncontrolling interest	\$ (10,347)	\$ (33,402)
Net loss from discontinued operations, net of income taxes	-	(4,469)
Net loss	(10,347)	(37,871)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Depreciation and amortization	18,080	17,624
Amortization of debt issuance costs and debt discount	5,099	3,262
Goodwill impairment	24,091	-
Deferred income taxes	(23,895)	(12,927)
Stock-based compensation	1,324	2,485
Income (loss) from equity method investees, net of income taxes	(7,966)	74
Distribution from equity method investment	3,247	-
Other	6	(81)
Changes in operating assets and liabilities before effects of business combinations and dispositions:		
Accounts receivable	72,684	30,456
Inventories	38,626	36,569
Derivative financial instruments	(32,290)	18,141
Prepaid expenses and other assets	1,135	2,637
Accounts payable and accrued liabilities	(58,652)	(59,456)
Current income taxes	(13,251)	(1,564)
Other	(114)	2,843
Net cash provided by operating activities - continuing operations	17,777	2,192
Net cash used in operating activities - discontinued operations	-	(22,975)
Net cash provided by (used in) operating activities	17,777	(20,783)
Cash flows from investing activities:		
Purchases of property and equipment, net	(38,792)	(9,388)
Proceeds from the sale of assets, net	-	3,155
Other investing activities	(1,098)	-
Net cash used in investing activities - continuing operations	(39,890)	(6,233)
Net cash used in investing activities - discontinued operations	-	(1,421)
Net cash used investing activities	(39,890)	(7,654)
Cash flows from financing activities:		
Proceeds from the issuance of long-term debt	-	30,600
Payments of principal on long-term debt	(21)	(29,781)
Proceeds from short-term borrowings	820,264	525,456
Payments on short-term borrowings	(844,316)	(555,687)
Payments for repurchase of common stock	(11,479)	-
Payments of cash dividends and distributions	(5,498)	(10,334)
Proceeds from disgorgement of shareholder short-swing profits	-	6,699
Payments related to tax withholdings for stock-based compensation	(1,209)	(1,978)
Net cash used in financing activities - continuing operations	(42,259)	(35,025)
Net cash provided by financing activities - discontinued operations	-	18,509
Net cash used in financing activities	(42,259)	(16,516)
Net change in cash, cash equivalents and restricted cash	(64,372)	(44,953)
Cash, cash equivalents and restricted cash, beginning of period	269,896	283,284
Discontinued operations cash activity included above:		
Add: Cash balance included in current assets of discontinued operations at beginning of period	-	34,911
Less: Cash balance included in current assets of discontinued operations at end of period	-	(24,555)
Cash, cash equivalents and restricted cash, end of period	\$ 205,524	\$ 248,687

Continued on the following page

GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(unaudited and in thousands)

Continued from the previous page

	Three Months Ended March 31,	
	2020	2019
Reconciliation of total cash, cash equivalents and restricted cash:		
Cash and cash equivalents	\$ 194,333	\$ 214,068
Restricted cash	11,191	59,174
Discontinued operations cash activity included above:		
Less: Cash, cash equivalents and restricted cash balance included in current assets of discontinued operations at end of period	-	(24,555)
Total cash, cash equivalents and restricted cash	<u>\$ 205,524</u>	<u>\$ 248,687</u>
Supplemental disclosures of cash flow:		
Cash paid (refunded) for income taxes	<u>\$ (4,663)</u>	<u>\$ 29</u>
Cash paid for interest of continuing operations	<u>\$ 8,683</u>	<u>\$ 7,550</u>
Cash paid for interest of discontinued operations	<u>\$ -</u>	<u>\$ 4,373</u>

See accompanying notes to the consolidated financial statements.

GREEN PLAINS INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(unaudited)

1. BASIS OF PRESENTATION, DESCRIPTION OF BUSINESS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

References to the Company

References to “Green Plains” or the “company” in the consolidated financial statements and in these notes to the consolidated financial statements refer to Green Plains Inc., an Iowa corporation, and its subsidiaries.

Consolidated Financial Statements

The consolidated financial statements include the company’s accounts and all significant intercompany balances and transactions are eliminated. Unconsolidated entities are included in the financial statements on an equity basis. The company owns a 49.0% limited partner interest and a 2.0% general partner interest in Green Plains Partners LP. Public investors own the remaining 49.0% limited partner interest in the partnership. The company determined that the limited partners in the partnership with equity at risk lack the power, through voting rights or similar rights, to direct the activities that most significantly impact partnership’s economic performance; therefore, the partnership is considered a variable interest entity. The company, through its ownership of the general partner interest in the partnership, has the power to direct the activities that most significantly affect economic performance and is obligated to absorb losses and has the right to receive benefits that could be significant to the partnership. Therefore, the company is considered the primary beneficiary and consolidates the partnership in the company’s financial statements. The assets of the partnership cannot be used by the company for general corporate purposes. The partnership’s consolidated total assets as of March 31, 2020 and December 31, 2019, excluding intercompany balances, are \$91.0 million and \$90.0 million, respectively, and primarily consist of property and equipment, operating lease right-of-use assets and goodwill. The partnership’s consolidated total liabilities as of March 31, 2020 and December 31, 2019, excluding intercompany balances, are \$182.5 million and \$180.9 million, respectively, which primarily consist of long-term debt as discussed in *Note 9 – Debt* and operating lease liabilities. The liabilities recognized as a result of consolidating the partnership do not represent additional claims on our general assets.

GPCC, a previously a wholly owned subsidiary of Green Plains, was disposed of during the third quarter of 2019. After closing, GPCC is no longer consolidated in the company’s consolidated financial statements and the GPCC investment is accounted for using the equity method of accounting. Additionally, the company concluded that the disposition of GPCC met the requirements under ASC 205-20 *Presentation of Financial Statements – Discontinued Operations* (“ASC 205-20”) to be presented as discontinued operations. As such, GPCC results prior to its disposition are classified as discontinued operations in prior period consolidated financial statements. See *Note 3 - Dispositions and Discontinued Operations* for further details.

The company also owns a 90.0% interest in BioProcess Algae, a joint venture formed in 2008, and consolidates their results in its consolidated financial statements.

The accompanying unaudited consolidated financial statements are prepared in accordance with GAAP for interim financial information and the instructions to Form 10-Q and Article 10 of Regulation S-X. Because they do not include all of the information and notes required by GAAP, the consolidated financial statements should be read in conjunction with the company’s annual report on Form 10-K for the year ended December 31, 2019, as filed with the SEC on February 20, 2020.

The unaudited financial information reflects adjustments, which are, in the opinion of management, necessary for a fair presentation of results of operations, financial position and cash flows for the periods presented. The adjustments are normal and recurring in nature, unless otherwise noted. Interim period results are not necessarily indicative of the results to be expected for the entire year.

Reclassifications

Certain prior year amounts relating to the discontinued operations of GPCC were reclassified to conform to the current year presentation. These reclassifications affected certain balance sheet line items, total revenues, costs and expenses.

Use of Estimates in the Preparation of Consolidated Financial Statements

The preparation of consolidated financial statements in conformity with GAAP requires management to make certain estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the reporting period. The company bases its estimates on historical experience and assumptions it believes are proper and reasonable under the circumstances and regularly evaluates the appropriateness of its estimates and assumptions. Actual results could differ from those estimates. Key accounting policies, including but not limited to those relating to revenue recognition, operating leases, impairment of long-lived assets and goodwill, derivative financial instruments and accounting for income taxes, are impacted significantly by judgments, assumptions and estimates used in the preparation of the consolidated financial statements.

Description of Business

The company operates within four business segments: (1) ethanol production, which includes the production of ethanol, distillers grains and corn oil, (2) agribusiness and energy services, which includes grain handling and storage, commodity marketing and merchant trading for company-produced and third-party ethanol, distillers grains, corn oil, natural gas and other commodities, (3) food and ingredients, which includes food-grade corn oil and (4) partnership, which includes fuel storage and transportation services.

Cash and Cash Equivalents

Cash and cash equivalents includes bank deposits as well as short-term, highly liquid investments with original maturities of three months or less.

Restricted Cash

The company has restricted cash, which can only be used for funding letters of credit or for payment towards a revolving credit agreement. Restricted cash also includes cash margins and securities pledged to commodity exchange clearinghouses and at times, funds in escrow related to acquisition and disposition activities. To the degree these segregated balances are cash and cash equivalents, they are considered restricted cash on the consolidated balance sheets.

Revenue Recognition

The company recognizes revenue when obligations under the terms of a contract with a customer are satisfied. Generally this occurs with the transfer of control of products or services. Revenue is measured as the amount of consideration expected to be received in exchange for transferring goods or providing services. Sales, value add, and other taxes the company collects concurrent with revenue-producing activities are excluded from revenue.

Sales of ethanol, distillers grains, corn oil, natural gas and other commodities by the company's marketing business are recognized when obligations under the terms of a contract with a customer are satisfied. Generally, this occurs with the transfer of control of products or services. Revenues related to marketing for third parties are presented on a gross basis as the company controls the product prior to the sale to the end customer, takes title of the product and has inventory risk. Unearned revenue is recorded for goods in transit when the company has received payment but control has not yet been transferred to the customer. Revenues for receiving, storing, transferring and transporting ethanol and other fuels are recognized when the product is delivered to the customer.

The company routinely enters into physical-delivery energy commodity purchase and sale agreements. At times, the company settles these transactions by transferring its obligations to other counterparties rather than delivering the physical commodity. Energy trading transactions are reported net as a component of revenue. Revenues include net gains or losses from derivatives related to products sold while cost of goods sold includes net gains or losses from derivatives related to commodities purchased. Revenues also include realized gains and losses on related derivative financial instruments and reclassifications of realized gains and losses on cash flow hedges from accumulated other comprehensive income or loss.

Sales of products, including agricultural commodities, are recognized when control of the product is transferred to the customer, which depends on the agreed upon shipment or delivery terms. Revenues related to grain merchandising are presented gross and include shipping and handling, which is also a component of cost of goods sold. Revenues from grain storage are recognized over time as the services are rendered.

A substantial portion of the partnership revenues are derived from fixed-fee commercial agreements for storage, terminal or transportation services. The partnership recognizes revenue upon transfer of control of product from its storage tanks and fuel terminals, when railcar volumetric capacity is provided, and as truck transportation services are performed. To the extent shortfalls associated with minimum volume commitments in the previous four quarters continue to exist, volumes in excess of the minimum volume commitment are applied to those shortfalls. Remaining excess volumes generating operating lease revenue are recognized as incurred.

Shipping and Handling Costs

The company accounts for shipping and handling activities related to contracts with customers as costs to fulfill its promise to transfer the associated products. Accordingly, the company records customer payments associated with shipping and handling costs as a component of revenue, and classifies such costs as a component of cost of goods sold.

Cost of Goods Sold

Cost of goods sold includes direct labor, materials, shipping and plant overhead costs. Direct labor includes all compensation and related benefits of non-management personnel involved in ethanol production. Grain purchasing and receiving costs, excluding labor costs for grain buyers and scale operators, are also included in cost of goods sold. Materials include the cost of corn feedstock, denaturant, and process chemicals. Corn feedstock costs include gains and losses on related derivative financial instruments not designated as cash flow hedges, inbound freight charges, inspection costs and transfer costs, as well as reclassifications of gains and losses on cash flow hedges from accumulated other comprehensive income or loss. Plant overhead consists primarily of plant utilities, repairs and maintenance and outbound freight charges. Shipping costs incurred by the company, including railcar costs, are also reflected in cost of goods sold.

The company uses exchange-traded futures and options contracts and forward purchase and sale contracts to attempt to minimize the effect of price changes on ethanol, grain and natural gas. Exchange-traded futures and options contracts are valued at quoted market prices and settled predominantly in cash. The company is exposed to loss when counterparties default on forward purchase and sale contracts. Grain inventories held for sale and forward purchase and sale contracts are valued at market prices when available or other market quotes adjusted for differences, primarily in transportation, between the exchange-traded market and local market where the terms of the contract is based. Changes in forward purchase contracts and exchange-traded futures and options contracts are recognized as a component of cost of goods sold.

Operations and Maintenance Expenses

In the partnership segment, transportation expenses represent the primary component of operations and maintenance expenses. Transportation expenses include railcar leases, freight and shipping of the company's ethanol and co-products, as well as costs incurred storing ethanol at destination terminals.

Derivative Financial Instruments

The company uses various derivative financial instruments, including exchange-traded futures and exchange-traded and over-the-counter options contracts, to attempt to minimize risk and the effect of commodity price changes including but not limited to, corn, ethanol, natural gas and crude oil. The company monitors and manages this exposure as part of its overall risk management policy to reduce the adverse effect market volatility may have on its operating results. The company may hedge these commodities as one way to mitigate risk; however, there may be situations when these hedging activities themselves result in losses.

By using derivatives to hedge exposures to changes in commodity prices, the company is exposed to credit and market risk. The company's exposure to credit risk includes the counterparty's failure to fulfill its performance obligations under the terms of the derivative contract. The company minimizes its credit risk by entering into transactions with high quality counterparties, limiting the amount of financial exposure it has with each counterparty and monitoring their financial condition. Market risk is the risk that the value of the financial instrument might be adversely affected by a change in commodity prices or interest rates. The company manages market risk by incorporating parameters to monitor exposure within its risk management strategy, which limits the types of derivative instruments and strategies the company can use and the degree of market risk it can take using derivative instruments.

The company evaluates its physical delivery contracts to determine if they qualify for normal purchase or sale exemptions which are expected to be used or sold over a reasonable period in the normal course of business. Contracts that

do not meet the normal purchase or sale criteria are recorded at fair value. Changes in fair value are recorded in operating income unless the contracts qualify for, and the company elects, cash flow hedge accounting treatment.

Certain qualifying derivatives related to ethanol production and agribusiness and energy services are designated as cash flow hedges. The company evaluates the derivative instrument to ascertain its effectiveness prior to entering into cash flow hedges. Unrealized gains and losses are reflected in accumulated other comprehensive income or loss until the gain or loss from the underlying hedged transaction is realized and the physical transaction is completed. When it becomes probable a forecasted transaction will not occur, the cash flow hedge treatment is discontinued, which affects earnings. These derivative financial instruments are recognized in current assets or current liabilities at fair value.

At times, the company hedges its exposure to changes in inventory values and designates qualifying derivatives as fair value hedges. The carrying amount of the hedged inventory is adjusted in the current period for changes in fair value. Ineffectiveness of the hedges is recognized in the current period to the extent the change in fair value of the inventory is not offset by the change in fair value of the derivative.

2. REVENUE

Revenue Recognition

Revenue is recognized when obligations under the terms of a contract with a customer are satisfied. Generally this occurs with the transfer of control of products or services. Revenue is measured as the amount of consideration expected to be received in exchange for transferring goods or providing services. Sales, value add, and other taxes the company collects concurrent with revenue-producing activities are excluded from revenue.

Revenue by Source

The following tables disaggregate revenue by major source for the three months ended March 31, 2020 and 2019 (in thousands):

	Three Months Ended March 31, 2020					
	Ethanol Production	Agribusiness & Energy Services	Food & Ingredients	Partnership	Eliminations	Total
Revenues:						
Revenues from contracts with customers under ASC 606:						
Ethanol	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Distillers grains	16,475	-	-	-	-	16,475
Service revenues	-	-	-	1,179	-	1,179
Other	2,959	390	-	-	-	3,349
Intersegment revenues	25	-	-	2,074	(2,099)	-
Total revenues from contracts with customers	19,459	390	-	3,253	(2,099)	21,003
Revenues from contracts accounted for as derivatives under ASC 815 ⁽¹⁾ :						
Ethanol	367,092	126,093	-	-	-	493,185
Distillers grains	72,527	4,709	-	-	-	77,236
Corn oil	14,684	5,730	-	-	-	20,414
Grain	6	7,950	-	-	-	7,956
Other	1,957	11,009	-	-	-	12,966
Intersegment revenues	-	7,308	-	-	(7,308)	-
Total revenues from contracts accounted for as derivatives	456,266	162,799	-	-	(7,308)	611,757
Leasing revenues under ASC 842 ⁽²⁾ :	-	-	-	17,018	(16,909)	109
Total Revenues	\$ 475,725	\$ 163,189	\$ -	\$ 20,271	\$ (26,316)	\$ 632,869

	Three Months Ended March 31, 2019 ⁽³⁾					
	Ethanol Production	Agribusiness & Energy Services	Food & Ingredients	Partnership	Eliminations	Total
Revenues:						
Revenues from contracts with customers under ASC 606:						
Ethanol	\$ 620	\$ -	\$ -	\$ -	\$ -	\$ 620
Distillers grains	17,681	-	-	-	-	17,681
Service revenues	-	-	-	2,083	-	2,083
Other	235	178	-	-	-	413
Intersegment revenues	25	-	-	1,392	(1,417)	-
Total revenues from contracts with customers	18,561	178	-	3,475	(1,417)	20,797
Revenues from contracts accounted for as derivatives under ASC 815 ⁽¹⁾ :						
Ethanol	201,158	77,077	-	-	-	278,235
Distillers grains	36,599	16,459	-	-	-	53,058
Corn oil	8,613	6,971	1,452	-	-	17,036
Grain	136	20,855	-	-	-	20,991
Other	5,766	42,536	-	-	-	48,302
Intersegment revenues	-	5,132	-	-	(5,132)	-
Total revenues from contracts accounted for as derivatives	252,272	169,030	1,452	-	(5,132)	417,622
Leasing revenues under ASC 842 ⁽²⁾ :	-	-	-	17,612	(17,390)	222
Total Revenues	\$ 270,833	\$ 169,208	\$ 1,452	\$ 21,087	\$ (23,939)	\$ 438,641

(1) Revenues from contracts accounted for as derivatives represent physically settled derivative sales that are outside the scope of ASC 606, where the company recognizes revenue when control of the inventory is transferred within the meaning of ASC 606 as required by ASC 610-20, *Gains and Losses from Derecognition of Nonfinancial Assets*.

(2) Leasing revenues do not represent revenues recognized from contracts with customers under ASC 606, and are accounted for under ASC 842, *Leases*.

(3) Revenues include certain items which were previously considered intercompany transactions prior to the disposition of GPCC and therefore eliminated upon consolidation. These revenue transactions are now presented on a gross basis in product revenues. These revenue transactions total \$3.4 million for the three months ended March 31, 2019.

Major Customer

Revenues from one customer represented 19% and 14% of total revenues for the three months ended March 31, 2020 and 2019, respectively. Revenues from this customer are reported in the ethanol production segment.

3. DISPOSITIONS AND DISCONTINUED OPERATIONS

DISPOSITIONS

Disposition of Green Plains Cattle Company LLC

On September 1, 2019, the company, TGAM and StepStone formed a joint venture and entered into the LLC Agreement. GPCC was previously a wholly owned subsidiary of Green Plains. Green Plains also entered into a Securities Purchase Agreement with TGAM and StepStone, whereby TGAM and StepStone purchased an aggregate of 50% of the membership interests of GPCC from Green Plains for approximately \$76.9 million in cash. There was no gain or loss recorded as part of this transaction. The LLC Agreement contains certain earn-out or bonus provisions to be paid by or received from GPCC if certain EBITDA thresholds are met. The company does not believe these are reasonably estimable and therefore has not recorded these amounts in the consolidated financial statements.

Under the LLC Agreement, Green Plains has certain rights and obligations, including but not limited to, the right or obligation: (i) to designate two Managers to the Board of Managers of GPCC (the "Board"), or in the event the size of the Board is increased, the number of Managers equal to two-fifths of the Board, rounded up, and (ii) to fund additional capital contributions in accordance with their percentage interest upon mutual agreement by Green Plains, TGAM and StepStone. Additionally, TGAM and StepStone both have the right or obligation to designate one Manager, or in the event the size of the Board is increased, the number of Managers equal to one-fifths of the Board, rounded up. Each Manager serving on the Board shall have one vote and a majority of the Managers serving on the Board shall constitute a quorum for the transaction of business of the Board. Green Plains' allocation under the LLC Agreement will be subject to certain adjustments.

The assets and liabilities of the GPCC at closing on September 1, 2019 were as follows (in thousands):

Amounts of Identifiable Assets Disposed and Liabilities Relinquished

Cash	\$	2
Accounts receivable, net		17,920
Inventory		387,534
Derivative financial instruments		48,189
Property and equipment		71,678
Other assets		2,291
Current liabilities		(49,297)
Short-term notes payable and other borrowings		(38)
Current maturities of long-term debt		(324,028)
Long-term debt		(80)
Other liabilities		(403)
Total identifiable net assets disposed	\$	<u>153,768</u>

DISCONTINUED OPERATIONS

After closing, GPCC is no longer consolidated in the company's consolidated financial statements and the GPCC investment is accounted for using the equity method of accounting. Additionally, the company concluded that the disposition of GPCC met the requirements under ASC 205-20. As such, GPCC results prior to its disposition are classified as discontinued operations for all applicable periods. Financial results of GPCC were previously recorded within the food and ingredients segment.

Summarized Results of Discontinued Operations

The following table presents the results of our discontinued operations for the three months ended March 31, 2019.

	Three Months Ended March 31, 2019
Product revenues	\$ 207,085
Costs and expenses	
Cost of goods sold (excluding depreciation and amortization expenses reflected below)	204,557
Selling, general and administrative expenses	2,284
Depreciation and amortization expenses	1,611
Total costs and expenses	<u>208,452</u>
Operating loss	<u>(1,367)</u>
Other income (expense)	
Interest income	77
Interest expense	<u>(4,696)</u>
Total other expense	<u>(4,619)</u>
Loss before income taxes	<u>(5,986)</u>
Income tax benefit	1,517
Net loss	<u>\$ (4,469)</u>

- (1) Product revenues, costs of goods sold and selling, general and administrative expenses include certain revenue and expense items which were previously considered intercompany transactions prior to the disposition of GPCC and therefore eliminated upon consolidation. These revenue and costs of goods sold transactions total \$3.4 million for the three months ended March 31, 2019.

4. FAIR VALUE DISCLOSURES

The following methods, assumptions and valuation techniques were used in estimating the fair value of the company's financial instruments:

Level 1 – unadjusted quoted prices in active markets for identical assets or liabilities the company can access at the measurement date.

Level 2 – directly or indirectly observable inputs such as quoted prices for similar assets or liabilities in active markets other than quoted prices included within Level 1, quoted prices for identical or similar assets in markets that are not active, and other inputs that are observable or can be substantially corroborated by observable market data through correlation or other means. Grain inventories held for sale in the agribusiness and energy services segment are valued at nearby futures values, plus or minus nearby basis.

Level 3 – unobservable inputs that are supported by little or no market activity and comprise a significant component of the fair value of the assets or liabilities. The company currently does not have any recurring Level 3 financial instruments.

Derivative contracts include exchange-traded commodity futures and options contracts and forward commodity purchase and sale contracts. Exchange-traded futures and options contracts are valued based on unadjusted quoted prices in active markets and are classified in Level 1. The majority of the company's exchange-traded futures and options contracts are cash-settled on a daily basis.

There have been no changes in valuation techniques and inputs used in measuring fair value. The company's assets and liabilities by level are as follows (in thousands):

Fair Value Measurements at March 31, 2020			
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Total
Assets:			
Cash and cash equivalents	\$ 194,333	\$ -	\$ 194,333
Restricted cash	11,191	-	11,191
Inventories carried at market	-	46,483	46,483
Unrealized gains on derivatives	-	22,943	22,943
Other assets	112	-	112
Total assets measured at fair value	\$ 205,636	\$ 69,426	\$ 275,062
Liabilities:			
Accounts payable ⁽¹⁾	\$ -	\$ 23,714	\$ 23,714
Unrealized losses on derivatives	-	15,589	15,589
Total liabilities measured at fair value	\$ -	\$ 39,303	\$ 39,303

Fair Value Measurements at December 31, 2019

	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Total
Assets:			
Cash and cash equivalents	\$ 245,977	\$ -	\$ 245,977
Restricted cash	23,919	-	23,919
Inventories carried at market	-	73,318	73,318
Unrealized gains on derivatives	-	14,515	14,515
Other assets	113	-	113
Total assets measured at fair value	\$ 270,009	\$ 87,833	\$ 357,842
Liabilities:			
Accounts payable ⁽¹⁾	\$ -	\$ 37,294	\$ 37,294
Unrealized losses on derivatives	-	7,771	7,771
Total liabilities measured at fair value	\$ -	\$ 45,065	\$ 45,065

(1) Accounts payable is generally stated at historical amounts with the exception of \$23.7 million and \$37.3 million at March 31, 2020 and December 31, 2019, respectively, related to certain delivered inventory for which the payable fluctuates based on changes in commodity prices. These payables are hybrid financial instruments for which the company has elected the fair value option.

The fair value of the company's debt was approximately \$556.6 million compared with a book value of \$545.0 million at March 31, 2020. The fair value of the company's debt approximated book value, which was \$564.4 million at December 31, 2019. The company estimated the fair value of its outstanding debt using Level 2 inputs. The company believes the fair values of its accounts receivable approximated book value, which was \$34.4 million and \$107.2 million at March 31, 2020 and December 31, 2019, respectively.

Although the company currently does not have any recurring Level 3 financial measurements, the fair values of tangible assets and goodwill acquired and the equity component of convertible debt represent Level 3 measurements which were derived using a combination of the income approach, market approach and cost approach for the specific assets or liabilities being valued.

5. SEGMENT INFORMATION

The company reports the financial and operating performance for the following four operating segments: (1) ethanol production, which includes the production of ethanol, distillers grains and corn oil, (2) agribusiness and energy services, which includes grain handling and storage, commodity marketing and merchant trading for company-produced and third-party ethanol, distillers grains, corn oil, natural gas and other commodities, (3) food and ingredients, which includes food-grade corn oil and (4) partnership, which includes fuel storage and transportation services.

Corporate activities include selling, general and administrative expenses, consisting primarily of compensation, professional fees and overhead costs not directly related to a specific operating segment.

During the normal course of business, the operating segments conduct business with each other. For example, the agribusiness and energy services segment procures grain and natural gas and sells products, including ethanol, distillers grains and corn oil for the ethanol production segment. The partnership segment provides fuel storage and transportation services for the ethanol production segment. These intersegment activities are treated like third-party transactions with origination, marketing and storage fees charged at estimated market values. Consequently, these transactions affect segment performance; however, they do not impact the company's consolidated results since the revenues and corresponding costs are eliminated.

The following tables set forth certain financial data for the company's operating segments (in thousands):

	Three Months Ended March 31,	
	2020	2019 ⁽¹⁾
Revenues:		
Ethanol production:		
Revenues from external customers	\$ 475,700	\$ 270,808
Intersegment revenues	25	25
Total segment revenues	475,725	270,833
Agribusiness and energy services:		
Revenues from external customers	155,881	164,076
Intersegment revenues	7,308	5,132
Total segment revenues	163,189	169,208
Food and ingredients:		
Revenues from external customers	-	1,452
Intersegment revenues	-	-
Total segment revenues	-	1,452
Partnership:		
Revenues from external customers	1,288	2,305
Intersegment revenues	18,983	18,782
Total segment revenues	20,271	21,087
Revenues including intersegment activity	659,185	462,580
Intersegment eliminations	(26,316)	(23,939)
Revenues as reported	\$ 632,869	\$ 438,641

(1) Revenues include certain items which were previously considered intercompany transactions prior to the disposition of GPCC and therefore eliminated upon consolidation. These revenue transactions are now presented on a gross basis in product revenues. These revenue transactions total \$3.4 million for the three months ended March 31, 2019.

Refer to *Note 2 - Revenue*, for further disaggregation of revenue by operating segment.

	Three Months Ended March 31,	
	2020	2019 ⁽¹⁾
Cost of goods sold:		
Ethanol production	\$ 489,150	\$ 293,487
Agribusiness and energy services	156,502	159,626
Food and ingredients	-	1,516
Intersegment eliminations	(28,424)	(20,238)
Total	\$ 617,228	\$ 434,391

(1) Cost of goods sold include certain items which were previously considered intercompany transactions prior to the disposition of GPCC and therefore eliminated upon consolidation. These cost of goods sold transactions are now presented on a gross basis in cost of goods sold. These cost of goods sold transactions total \$3.4 million for the three months ended March 31, 2019.

	Three Months Ended March 31,	
	2020	2019
Operating income (loss):		
Ethanol production ⁽¹⁾	\$ (60,781)	\$ (44,192)
Agribusiness and energy services	2,560	5,304
Food and ingredients	-	(65)
Partnership	12,430	12,551
Intersegment eliminations	2,133	(3,677)
Corporate activities	(10,670)	(8,559)
Total	\$ (54,328)	\$ (38,638)

(1) Operating loss for ethanol production includes a goodwill impairment charge of \$24.1 million for the three months ended March 31, 2020.

	Three Months Ended March 31,	
	2020	2019
Depreciation and amortization:		
Ethanol production	\$ 15,898	\$ 15,340
Agribusiness and energy services	553	549
Partnership	961	985
Corporate activities	668	750
	<u>\$ 18,080</u>	<u>\$ 17,624</u>

The following table sets forth total assets by operating segment (in thousands):

	March 31, 2020	December 31, 2019
Total assets ⁽¹⁾ :		
Ethanol production	\$ 903,447	\$ 884,293
Agribusiness and energy services	288,297	410,400
Partnership	90,992	90,011
Corporate assets	351,211	324,280
Intersegment eliminations	4,151	(10,766)
	<u>\$ 1,638,098</u>	<u>\$ 1,698,218</u>

(1) Asset balances by segment exclude intercompany balances.

6. INVENTORIES

Inventories are carried at the lower of cost or net realizable value, except grain held for sale and fair-value hedged inventories. Commodities held for sale are reported at market value. As of March 31, 2020 and December 31, 2019, the company recorded a \$27.7 million and \$6.6 million lower of cost or market inventory adjustment reflected in cost of goods sold within the ethanol production segment, respectively.

The components of inventories are as follows (in thousands):

	March 31, 2020	December 31, 2019
Finished goods	\$ 65,525	\$ 85,975
Commodities held for sale	21,409	42,836
Raw materials	81,938	77,900
Work-in-process	11,370	13,523
Supplies and parts	34,094	32,758
	<u>\$ 214,336</u>	<u>\$ 252,992</u>

7. GOODWILL

Goodwill

The company currently has two reporting units, to which goodwill is assigned. We are required to perform impairment tests related to our goodwill annually, which we perform as of October 1, or sooner if an indicator of impairment occurs. Near term industry outlook due to the significant decrease in crude oil prices, lower gasoline demand, general uncertainty due to the COVID-19 outbreak and the subsequent decline in our stock price caused a decline in the company's market capitalization during the three months ended March 31, 2020. As such, the company determined a triggering event had occurred that required an interim impairment assessment for its ethanol production reporting unit. Due to the impairment indicators noted as a result of these triggering events, we evaluated our goodwill as of March 31, 2020. Significant assumptions inherent in the valuation methodologies for goodwill are employed and include, but are not limited to, prospective financial information, growth rates, discount rates, inflationary factors, and cost of capital. Based on our quantitative evaluation, we determined that the fair value of the ethanol production reporting unit did not exceed its carrying value. As a result, we concluded that the goodwill assigned to the ethanol production reporting unit was impaired and recorded a non-cash impairment charge of \$24.1 million.

Based on the company's quantitative evaluation of the partnership's goodwill, it was determined that the fair value of the partnership reporting unit exceeded its carrying value. As a result, the company concluded that the goodwill assigned to the partnership reporting unit was not impaired, but could be at risk of future impairment. The company continues to believe that its long-term financial goals of the partnership will be achieved. As a result of the analysis, the company did not take a goodwill impairment charge on its partnership reporting unit as of March 31, 2020.

Changes in the carrying amount of goodwill attributable to each business segment during the three months ended March 31, 2020 were as follows (in thousands):

	Ethanol Production	Partnership	Total
Balance, December 31, 2019	\$ 24,091	\$ 10,598	\$ 34,689
Impairment charge	(24,091)	-	(24,091)
Balance, March 31, 2020	<u>\$ -</u>	<u>\$ 10,598</u>	<u>\$ 10,598</u>

8. DERIVATIVE FINANCIAL INSTRUMENTS

At March 31, 2020, the company's consolidated balance sheet reflected unrealized gains of \$30.9 million, net of tax, in accumulated other comprehensive income which primarily related to our share of equity method investees other comprehensive income. The company expects these gains will be reclassified as income from equity method investees, net of income taxes over the next 12 months as a result of hedged transactions that are forecasted to occur. The amount realized in income from equity method investees, net of income taxes will differ as commodity prices change.

Fair Values of Derivative Instruments

The fair values of the company's derivative financial instruments and the line items on the consolidated balance sheets where they are reported are as follows (in thousands):

	Asset Derivatives' Fair Value		Liability Derivatives' Fair Value	
	March 31, 2020	December 31, 2019	March 31, 2020	December 31, 2019
Derivative financial instruments	<u>\$ 22,943</u> (1)	<u>\$ 14,515</u> (2)	<u>\$ 15,589</u>	<u>\$ 7,771</u>

(1) At March 31, 2020, derivative financial instruments, as reflected on the balance sheet, includes net unrealized gains on exchange traded futures and options contracts of \$34.2 million, which include \$1.0 million of net unrealized gains on derivative financial instruments designated as cash flow hedging instruments.

(2) At December 31, 2019, derivative financial instruments, as reflected on the balance sheet, includes net unrealized gains on exchange traded futures and options contracts of \$3.4 million, which include \$0.1 million of net unrealized gains on derivative financial instruments designated as cash flow hedging instruments.

Refer to *Note 4 - Fair Value Disclosures*, which contains fair value information related to derivative financial instruments.

Effect of Derivative Instruments on Consolidated Balance Sheets, Consolidated Statements of Operations and Consolidated Statements of Comprehensive Income

The gains or losses recognized in income and other comprehensive income related to the company's derivative financial instruments and the line items on the consolidated financial statements where they are reported are as follows (in thousands):

Location of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income into Income	Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income into Income	
	Three Months Ended March 31,	
	2020	2019
Revenues	\$ 8,818	\$ -
Cost of goods sold	(2,901)	-
Net loss from discontinued operations, net of income taxes	-	(13,516)
Net gain (loss) recognized in loss before tax	\$ 5,917	\$ (13,516)

Gain (Loss) Recognized in Other Comprehensive Income on Derivatives	Amount of Gain (Loss) Recognized in Other Comprehensive Income on Derivatives	
	Three Months Ended March 31,	
	2020	2019
Commodity contracts	\$ 5,979	\$ (8,963)

Derivatives Not Designated as Hedging Instruments	Location of Gain (Loss) Recognized in Income on Derivatives	Amount of Gain (Loss) Recognized in Income on Derivatives	
		Three Months Ended March 31,	
		2020	2019
Commodity contracts	Revenues	\$ 45,407	\$ (12,824)
Commodity contracts	Costs of goods sold	(2,679)	3,410
Commodity contracts	Net loss from discontinued operations, net of income taxes	-	(5,741)
Net gain (loss) recognized in loss before tax		\$ 42,728	\$ (15,155)

The following amounts were recorded on the consolidated balance sheets related to cumulative basis adjustments for the fair value hedged items (in thousands):

Line Item in the Consolidated Balance Sheet in Which the Hedged Item is Included	March 31, 2020		December 31, 2019	
	Carrying Amount of the Hedged Assets	Cumulative Amount of Fair Value Hedging Adjustment Included in the Carrying Amount of the Hedged Assets	Carrying Amount of the Hedged Assets	Cumulative Amount of Fair Value Hedging Adjustment Included in the Carrying Amount of the Hedged Assets
Inventories	\$ 32,463	\$ (6,185)	\$ 55,021	\$ (2,808)

Effect of Cash Flow and Fair Value Hedge Accounting on the Statements of Operations

The effect of cash flow and fair value hedges and the line items on the consolidated statements of operations where they are reported are as follows (in thousands):

	Location and Amount of Gain or (Loss) Recognized in Income on Cash Flow and Fair Value Hedging Relationships for the Three Months Ended March 31,					
	2020			2019		
	Revenue	Cost of Goods Sold	Income (Loss) from Discontinued Operations, Net of Income Taxes	Revenue	Cost of Goods Sold	Loss from Discontinued Operations, Net of Income Taxes
Gain (loss) on cash flow hedging relationships:						
Commodity contracts:						
Amount of gain (loss) reclassified from accumulated other comprehensive income into income	\$ 8,818	\$ (2,901)	\$ -	\$ -	\$ -	\$ (13,516)
Gain (loss) on fair value hedging relationships:						
Commodity contracts:						
Hedged item	-	(7,594)	-	-	(1,553)	-
Derivatives designated as hedging instruments	-	8,114	-	-	3,859	-
Total amounts of income and expense line items presented in the statement of operations in which the effects of cash flow or fair value hedges are recorded	<u>\$ 8,818</u>	<u>\$ (2,381)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 2,306</u>	<u>\$ (13,516)</u>

There were no gains or losses from discontinuing cash flow or fair value hedge treatment during the three months ended March 31, 2020 and 2019.

The open commodity derivative positions as of March 31, 2020, are as follows (in thousands):

Derivative Instruments	Exchange Traded ⁽¹⁾	Non-Exchange Traded ⁽²⁾		Unit of Measure	Commodity
	Net Long & (Short)	Long	(Short)		
Futures	(23,875)			Bushels	Corn and Soybeans
Futures	(6,865) ⁽³⁾			Bushels	Corn
Futures	(170,226)			Gallons	Ethanol
Futures	(2,940) ⁽⁴⁾			Gallons	Ethanol
Futures	(10,588)			MmBTU	Natural Gas
Futures	(5,038) ⁽³⁾			MmBTU	Natural Gas
Options	19			Tons	Soybean Meal
Options	(3,667)			Bushels	Corn
Options	18,358			Gallons	Ethanol
Options	615			MmBTU	Natural Gas
Forwards		17,471	(811)	Bushels	Corn and Soybeans
Forwards		1,885	(262,121)	Gallons	Ethanol
Forwards		159	(463)	Tons	DDG
Forwards		23,616	(120,471)	Pounds	Corn Oil
Forwards		2,943	(391)	MmBTU	Natural Gas

(1) Exchange traded futures and options are presented on a net long and (short) position basis. Options are presented on a delta-adjusted basis.

(2) Non-exchange traded forwards are presented on a gross long and (short) position basis including both fixed-price and basis contracts.

(3) Futures used for cash flow hedges.

(4) Futures or non-exchange traded forwards used for fair value hedges.

Energy trading contracts that do not involve physical delivery are presented net in revenues on the consolidated statements of operations. Included in revenues are net gains on energy trading contracts of \$3.1 million and \$8.5 million for the three ended March 31, 2020 and 2019, respectively.

9. DEBT

The components of long-term debt are as follows (in thousands):

	March 31, 2020	December 31, 2019
Corporate:		
\$170.0 million convertible notes due 2022 ⁽¹⁾	\$ 150,990	\$ 149,256
\$115.0 million convertible notes due 2024 ⁽²⁾	84,842	83,497
Green Plains Partners:		
\$200.0 million revolving credit facility ⁽³⁾	130,200	132,100
Other	16,469	16,512
Total face value of long-term debt	382,501	381,365
Unamortized debt issuance costs	(4,506)	(4,820)
Less: current maturities of long-term debt	(130,785)	(132,555)
Total long-term debt	\$ 247,210	\$ 243,990

(1) Includes \$1.9 million and \$2.0 million of unamortized debt issuance costs as of March 31, 2020 and December 31, 2019, respectively.

(2) Includes \$2.6 million and \$2.8 million of unamortized debt issuance costs as of March 31, 2020 and December 31, 2019, respectively.

(3) The Green Plains Partners revolving credit facility is included in current maturities of long-term debt balance on the consolidated balance sheets as of March 31, 2020 and December 31, 2019 as its maturity date is July 1, 2020.

The components of short-term notes payable and other borrowings are as follows:

	March 31, 2020	December 31, 2019
Green Plains Trade:		
\$300.0 million revolver	\$ 61,208	\$ 138,204
Green Plains Grain:		
\$100.0 million revolver	78,000	40,000
\$50.0 million inventory financing	-	-
Green Plains Commodity Management:		
\$30.0 million hedge line	27,835	9,608
	<u>\$ 167,043</u>	<u>\$ 187,812</u>

Corporate Activities

During 2019, the company issued an aggregate \$115.0 million of 4.00% convertible senior notes due in 2024, or the 4.00% notes. The 4.00% notes are senior, unsecured obligations of the company, with interest payable on January 1 and July 1 of each year, beginning January 1, 2020, at a rate of 4.00% per annum. The 4.00% notes will mature on July 1, 2024, unless earlier converted, redeemed or repurchased. The 4.00% notes will be convertible, at the option of the holders, into consideration consisting of, at the company's election, cash, shares of the company's common stock, or a combination of cash and shares of the company's common stock until the close of business on the scheduled trading day immediately preceding the maturity date. However, before January 1, 2024, the 4.00% notes will not be convertible unless certain conditions are satisfied. The initial conversion rate is 64.1540 shares of common stock per \$1,000 of principal, which is equal to a conversion price of approximately \$15.59 per share. The conversion rate will be subject to adjustment upon the occurrence of certain events. In addition, the company may be obligated to increase the conversion rate for any conversion that occurs in connection with certain corporate events, including the company's calling the 4.00% notes for redemption.

On and after July 1, 2022, and prior to the maturity date, the company may redeem all, but not less than all, of the 4.00% notes for cash if the sale price of the company's common stock equals or exceeds 140% of the applicable conversion price for a specified time period ending on the trading day immediately prior to the date the company delivers notice of the redemption. The redemption price will equal 100% of the principal amount of the 4.00% notes to be redeemed, plus any accrued and unpaid interest to, but excluding, the redemption date. In addition, upon the occurrence of a fundamental change, holders of the 4.00% notes will have the right, at their option, to require the company to repurchase the 4.00% notes in cash at a price equal to 100% of the principal amount of the 4.00% notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date.

In August 2016, the company issued \$170.0 million of 4.125% convertible senior notes due in 2022, or the 4.125% notes. The 4.125% notes are senior, unsecured obligations of the company, with interest payable on March 1 and September 1 of each year. The company may settle the 4.125% notes in cash, common stock or a combination of cash and common stock.

Prior to March 1, 2022, the 4.125% notes are not convertible unless certain conditions are satisfied. The initial conversion rate is 35.7143 shares of common stock per \$1,000 of principal, which is equal to a conversion price of approximately \$28.00 per share. The conversion rate is subject to adjustment upon the occurrence of certain events, including upon redemption of the 4.125% notes.

The company may redeem all, but not less than all, of the 4.125% notes at any time on or after September 1, 2020, if the company's common stock equals or exceeds 140% of the applicable conversion price for a specified time period ending on the trading day immediately prior to the date the company delivers notice of the redemption. The redemption price will equal 100% of the principal plus any accrued and unpaid interest. Holders of the 4.125% notes have the option to require the company to repurchase the 4.125% notes in cash at a price equal to 100% of the principal plus accrued and unpaid interest when there is a fundamental change, such as change in control. If an event of default occurs, it could result in the 4.125% notes being declared due and payable.

Ethanol Production Segment

The company has small equipment financing loans, finance leases on equipment or facilities, and other forms of debt financing.

Agribusiness and Energy Services Segment

Green Plains Trade has a \$300.0 million senior secured asset-based revolving credit facility to finance working capital for marketing and distribution activities based on eligible collateral equal to the sum of percentages of eligible receivables and inventories, less miscellaneous adjustments. The credit facility matures on July 28, 2022 and consists of a \$285 million credit facility and a \$15 million first-in-last-out (FILO) credit facility, and includes an accordion feature that enables the credit facility to be increased by up to \$70.0 million with agent approval. Advances are subject to variable interest rates equal to daily LIBOR plus 2.25% on the credit facility and daily LIBOR plus 3.25% on the FILO credit facility. The total unused portion of the revolving credit facility is also subject to a commitment fee of 0.375% per annum.

The terms impose affirmative and negative covenants for Green Plains Trade, including maintaining a minimum fixed charge coverage ratio of 1.15 to 1.00. Capital expenditures are limited to \$1.5 million per year under the credit facility. The credit facility also restricts distributions related to capital stock, with an exception for distributions up to 50% of net income if, on a pro forma basis, (a) availability has been greater than \$10.0 million for the last 30 days and (b) the borrower would be in compliance with the fixed charge coverage ratio on the distribution date.

Green Plains Grain has a \$100.0 million senior secured asset-based revolving credit facility, which matures on June 28, 2022. The credit facility finances working capital up to the maximum commitment based on eligible collateral equal to the sum of percentages of eligible cash, receivables and inventories, less miscellaneous adjustments. Advances are subject to an interest rate equal to LIBOR plus 3.00% or the lenders' base rate plus 2.00%. The credit facility also includes an accordion feature that enables the facility to be increased by up to \$75.0 million with agent approval. The credit facility can also be increased by up to \$50.0 million for seasonal borrowings. Total commitments outstanding cannot exceed \$225.0 million. Depending on utilization, the total unused portion of the \$100.0 million revolving credit facility is also subject to a commitment fee ranging from 0.375% to 0.50%.

Lenders receive a first priority lien on certain cash, inventory, accounts receivable and other assets owned by Green Plains Grain. The terms impose affirmative and negative covenants for Green Plains Grain, including maintaining minimum working capital to be the greater of (i) \$18,000,000 and (ii) 18% of the sum of the then total commitment plus the aggregate seasonal line commitments. Minimum tangible net worth is required to be greater than 21% of the sum of the then total commitment plus the aggregate seasonal line commitments. The credit facility also requires the company to maintain a maximum annual leverage of 6.00 to 1.00. Capital expenditures are limited to \$8.0 million per year under the credit facility, plus equity contributions from the company and unused amounts of up to \$8.0 million from the previous year. In addition, if the company has long-term indebtedness on the date of calculation of greater than \$10.0 million, the credit facility requires the company to maintain a minimum fixed charge coverage ratio of 1.25 to 1.00 and a maximum long term debt capitalization of 40%.

Green Plains Grain has entered into short-term inventory financing agreements with a financial institution. The company has accounted for the agreements as short-term notes, rather than sales, and has elected the fair value option to offset fluctuations in market prices of the inventory. The company had no short-term notes payable related to these inventory financing agreements as of March 31, 2020.

Green Plains Commodity Management has an uncommitted \$30.0 million revolving credit facility which matures April 30, 2023 to finance margins related to its hedging programs. Advances are subject to variable interest rates equal to LIBOR plus 1.75%.

Partnership Segment

Green Plains Partners, through a wholly owned subsidiary, has a \$200.0 million revolving credit facility to fund working capital, acquisitions, distributions, capital expenditures and other general partnership purposes. The credit facility matures on July 1, 2020, and as a result, was reclassified to current maturities of long-term debt during the three months ended September 30, 2019. Advances under the credit facility are subject to a floating interest rate based on the preceding fiscal quarter's consolidated leverage ratio at a base rate plus 1.25% to 2.00% or LIBOR plus 2.25% to 3.00%. The credit facility can be increased by an additional \$20.0 million without the consent of the lenders. The unused portion of the credit facility is also subject to a commitment fee of 0.35% to 0.50%, depending on the preceding fiscal quarter's consolidated leverage ratio.

The partnership's obligations under the credit facility are secured by a first priority lien on (i) the capital stock of the partnership's present and future subsidiaries, (ii) all of the partnership's present and future personal property, such as investment property, general intangibles and contract rights, including rights under agreements with Green Plains Trade, and (iii) all proceeds and products of the equity interests of the partnership's present and future subsidiaries and its personal

property. The terms impose affirmative and negative covenants including restricting the partnership's ability to incur additional debt, acquire and sell assets, create liens, invest capital, pay distributions and materially amend the partnership's commercial agreements with Green Plains Trade. The credit facility also requires the partnership to maintain a maximum consolidated net leverage ratio of no more than 3.50x and a minimum consolidated interest coverage ratio of no less than 2.75x, each of which is calculated on a pro forma basis with respect to acquisitions and divestitures occurring during the applicable period. The consolidated leverage ratio is calculated by dividing total funded indebtedness minus the lesser of cash in excess of \$5.0 million or \$30.0 million by the sum of the four preceding fiscal quarters' consolidated EBITDA. The consolidated interest coverage ratio is calculated by dividing the sum of the four preceding fiscal quarters' consolidated EBITDA by the sum of the four preceding fiscal quarters' interest charges.

The partnership is required to file a Form of Compliance Certificate attesting to its compliance under the revolving credit facility each quarter by the earlier of 45 days from the end of each such quarter or within 5 days of the SEC filing for such quarter or with respect to each fiscal year, the earlier of 90 days from the end of such fiscal year or within 15 days of the SEC filing for such fiscal year. As of March 31, 2020, the partnership was in full compliance of all covenants, and will report a consolidated leverage ratio of 2.47x and a consolidated interest coverage ratio of 6.49x.

The revolving credit facility, which is supported by a group of financial institutions, will mature on July 1, 2020 unless extended by agreement of the lenders or replaced by another funding source. The partnership is currently working with its existing lender group to extend the credit facility. While the partnership has not yet formalized the credit facility or secured additional funding necessary to repay the loan, the partnership believes it is probable that it will source appropriate funding given the partnership's consistent and stable fee-based cash flows, ongoing profitability, low debt leverage and history of obtaining financing on reasonable commercial terms. In the unlikely scenario that the partnership is unable to refinance its debt with the lenders, the partnership will consider other financing sources, including but not limited to, the restructuring or issuance of new debt with a different lending group, the issuance of additional common units, or other measures.

Covenant Compliance

The company was in compliance with its debt covenants as of March 31, 2020.

Restricted Net Assets

At March 31, 2020, there were approximately \$65.5 million of net assets at the company's subsidiaries that could not be transferred to the parent company in the form of dividends, loans or advances due to restrictions contained in the credit facilities of these subsidiaries.

10. STOCK-BASED COMPENSATION

The company has an equity incentive plan that reserves 4,110,000 shares of common stock for issuance to its directors and employees. The plan provides for shares, including options to purchase shares of common stock, stock appreciation rights tied to the value of common stock, restricted stock, performance shares, and restricted and deferred stock unit awards, to be granted to eligible employees, non-employee directors and consultants. The company measures stock-based compensation at fair value on the grant date, with no adjustments for estimated forfeitures. The company records noncash compensation expense related to equity awards in its consolidated financial statements over the requisite period on a straight-line basis.

Restricted Stock Awards and Deferred Stock Units

The non-vested stock award and deferred stock unit activity for the three months ended March 31, 2020, is as follows:

	Non-Vested Shares and Deferred Stock Units	Weighted- Average Grant- Date Fair Value	Weighted-Average Remaining Vesting Term (in years)
Non-Vested at December 31, 2019	751,315	\$ 17.48	
Granted	476,474	10.64	
Forfeited	(19,750)	16.20	
Vested	(282,786)	19.49	
Non-Vested at March 31, 2020	925,253	\$ 13.37	2.3

Performance Shares

On March 18, 2020, the board of directors granted performance shares to be awarded in the form of common stock to certain participants of the plan. These performance shares vest based on the level of achievement of certain performance goals, including the incremental value achieved from the company's high-protein initiatives, annual production levels and return on investment (ROI). The performance shares were granted at a target of 100%, but each performance share will reduce or increase depending on results for the performance period. If the company achieves the maximum performance goals, the maximum amount of shares available to be issued pursuant to the 2020 awards are 641,823 performance shares which represents approximately 276% of the 232,566 performance shares which remain outstanding. The actual number of performance shares that will ultimately vest is based on the actual performance targets achieved at the end of the performance period.

On February 19, 2019 and March 19, 2018, the board of directors granted performance shares to be awarded in the form of common stock to certain participants of the plan. These performance shares vest based on the company's average return on net assets (RONA) and the company's total shareholder return (TSR), as further described herein. The performance shares vest on the third anniversary of the grant, if the RONA and TSR criteria are achieved and the participant is then employed by the company. Fifty percent of the performance shares vest based upon the company's ability to achieve a predetermined RONA during the three year performance period. The remaining fifty percent of the performance shares vest based upon the company's total TSR during the three year performance period relative to that of the company's performance peer group.

The performance shares were granted at a target of 100%, but each performance share will reduce or increase depending on results for the performance period for the company's RONA, and the company's TSR relative to that of the performance peer group. If the company's RONA and TSR achieve the maximum goals, the maximum amount of shares available to be issued pursuant to the 2018 and 2019 awards are 428,104 performance shares or 150% of the 285,403 performance shares which remain outstanding. The actual number of performance shares that will ultimately vest is based on the actual percentile ranking of the company's RONA, and the company's TSR compared to the peer performance at the end of the performance period.

The company used the Monte Carlo valuation model to estimate the fair value of the performance shares on the date of the grant. The weighted average assumptions used by the company in applying the Monte Carlo valuation model for performance share grants are illustrated in the following table:

	FY 2019 Performance Awards	FY 2018 Performance Awards
Risk-free interest rate	2.45 %	2.44 %
Dividend yield	3.13 %	2.64 %
Expected volatility	41.69 %	45.11 %
Monte Carlo valuation	99.62 %	97.39 %
Closing stock price on the date of grant	\$ 15.34	\$ 18.15

The non-vested performance share award activity for the three months ended March 31, 2020, is as follows:

	Performance Shares	Weighted- Average Grant- Date Fair Value	Weighted-Average Remaining Vesting Term (in years)
Non-Vested at December 31, 2019	285,403	\$ 16.38	
Granted	232,566	10.64	
Non-Vested at March 31, 2020	517,969	\$ 13.80	2.4

Stock Options

The fair value of the stock options is estimated on the date of the grant using the Black-Scholes option-pricing model, a pricing model acceptable under GAAP. The expected life of the options is the period of time the options are expected to be outstanding. The company did not grant any stock option awards during the three months ended March 31, 2020 and 2019.

The activity related to the exercisable stock options for the three months ended March 31, 2020, is as follows:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2019	10,000	\$ 16.95	0.2	\$ -
Expired	(10,000)	16.95	-	-
Outstanding at March 31, 2020	-	\$ -	-	\$ -
Exercisable at March 31, 2020	-	\$ -	-	\$ -

Green Plains Partners

Green Plains Partners has a long-term incentive plan (LTIP) intended to promote the interests of the partnership, its general partner and affiliates by providing unit-based incentive compensation awards to employees, consultants and directors to encourage superior performance. The LTIP reserves 2,500,000 common limited partner units for issuance in the form of options, restricted units, phantom units, distribution equivalent rights, substitute awards, unit appreciation rights, unit awards, profit interest units or other unit-based awards. The partnership measures unit-based compensation at fair value on the grant date, with no adjustments for estimated forfeitures. The partnership records noncash compensation expense related to the awards over the requisite service period on a straight-line basis.

There was no change in the number of non-vested unit-based awards during the three months ended March 31, 2020.

Stock-Based and Unit-Based Compensation Expense

Compensation costs for stock-based and unit-based payment plans were approximately \$1.3 million and \$2.5 million for the three months ended March 31, 2020 and 2019, respectively. At March 31, 2020, there was \$14.5 million of unrecognized compensation costs from stock-based and unit-based compensation related to non-vested awards. This compensation is expected to be recognized over a weighted-average period of approximately 2.3 years. The potential tax benefit related to stock-based payment is approximately 24.2% of these expenses.

11. EARNINGS PER SHARE

Basic earnings per share, or EPS, is calculated by dividing net income available to common stockholders by the weighted average number of common shares outstanding during the period.

The company computed diluted EPS by dividing net income on an if-converted basis, adjusted to add back net interest expense related to the convertible debt instruments, by the weighted average number of common shares outstanding during the period, adjusted to include the shares that would be issued if the convertible debt instruments were converted to common shares and the effect of any outstanding dilutive securities. In addition, due to the presentation of GPCC as discontinued operations, the company has presented basic and diluted earnings per share from both continuing operations and from discontinued operations.

The basic and diluted EPS are calculated as follows (in thousands, except per share amounts):

	Three Months Ended March 31,	
	2020	2019
Numerator:		
Net loss from continuing operations ⁽¹⁾	\$ (16,445)	\$ (38,330)
Net loss from discontinued operations	-	(4,469)
Net loss attributable to Green Plains	\$ (16,445)	\$ (42,799)
Denominator:		
Weighted-average shares outstanding - basic	34,665	40,315
Dilutive effect of convertible debt and stock-based compensation ⁽²⁾	-	-
Weighted-average shares outstanding - diluted	34,665	40,315
EPS - basic and diluted:		
EPS from continuing operations	\$ (0.47)	\$ (0.95)
EPS from discontinued operations	-	(0.11)
EPS	\$ (0.47)	\$ (1.06)
Anti-dilutive weighted-average convertible debt and stock-based compensation ⁽²⁾	13,926	9,853

(1) Net loss from continuing operations can be recalculated from our consolidated statements of operations by taking the net loss from continuing operations including noncontrolling interest less net income attributable to noncontrolling interests.

(2) The effect related to the company's convertible debt and stock-based compensation awards have been excluded from diluted EPS for the periods presented as the inclusion of these shares would have been antidilutive.

12. STOCKHOLDERS' EQUITY

Components of stockholders' equity for the three ended March 31, 2020 and 2019 are as follows (in thousands):

	<u>Common Stock</u>		<u>Additional Paid-in Capital</u>	<u>Retained Earnings</u>	<u>Accum. Other Comp. Income</u>	<u>Treasury Stock</u>		<u>Total Green Plains Stockholders' Equity</u>	<u>Non- Controlling Interests</u>	<u>Total Stockholders' Equity</u>
	<u>Shares</u>	<u>Amount</u>				<u>Shares</u>	<u>Amount</u>			
Balance, January 1, 2020	46,964	\$ 47	\$ 734,580	\$ 148,150	(11,064)	10,932	\$ (119,808)	\$ 751,905	\$ 113,381	\$ 865,286
Net income (loss)	-	-	-	(16,445)	-	-	-	(16,445)	6,098	(10,347)
Distributions declared	-	-	-	-	-	-	-	-	(5,498)	(5,498)
Other comprehensive loss before reclassification	-	-	-	-	4,532	-	-	4,532	-	4,532
Amounts reclassified from accumulated other comprehensive loss	-	-	-	-	(4,485)	-	-	(4,485)	-	(4,485)
Other comprehensive income, net of tax	-	-	-	-	47	-	-	47	-	47
Share of equity method investees other comprehensive loss arising during the period, net of tax	-	-	-	-	41,956	-	-	41,956	-	41,956
Repurchase of common stock	-	-	-	-	-	881	(11,479)	(11,479)	-	(11,479)
Stock-based compensation	343	-	36	-	-	-	-	36	79	115
Balance, March 31, 2020	47,307	\$ 47	\$ 734,616	\$ 131,705	\$ 30,939	11,813	\$ (131,287)	\$ 766,020	\$ 114,060	\$ 880,080

	Common Stock		Additional Paid-in Capital	Retained Earnings	Accum. Other Comp. Income	Treasury Stock		Total Green Plains Stockholders' Equity	Non-Controlling Interests	Total Stockholders' Equity
	Shares	Amount				Shares	Amount			
Balance, January 1, 2019	46,638	\$ 47	\$ 696,222	\$ 324,728	\$ (16,016)	5,536	\$ (58,162)	\$ 946,819	\$ 116,170	\$ 1,062,989
Net income (loss)	-	-	-	(42,799)	-	-	-	(42,799)	4,928	(37,871)
Cash dividends and distributions declared	-	-	-	(4,847)	-	-	-	(4,847)	(5,487)	(10,334)
Other comprehensive loss before reclassification	-	-	-	-	(6,883)	-	-	(6,883)	-	(6,883)
Amounts reclassified from accumulated other comprehensive loss	-	-	-	-	10,376	-	-	10,376	-	10,376
Other comprehensive income, net of tax	-	-	-	-	3,493	-	-	3,493	-	3,493
Proceeds from disgorgement of shareholders short-swing profits, net ⁽¹⁾	-	-	5,023	-	-	-	-	5,023	-	5,023
Stock-based compensation	284	-	428	-	-	-	-	428	79	507
Balance, March 31, 2019	46,922	\$ 47	\$ 701,673	\$ 277,082	\$ (12,523)	5,536	\$ (58,162)	\$ 908,117	\$ 115,690	\$ 1,023,807

(1) During the three months ended March 31, 2019, the company received \$6.7 million from a shareholder of the company for disgorgement of shareholder short-swing profits under Section 16(b) under the Exchange Act. The amount was recorded as an increase to additional paid-in capital, net of tax.

Amounts reclassified from accumulated other comprehensive income are as follows (in thousands):

	Three Months Ended March 31,		Statements of Operations Classification
	2020	2019	
Gains (losses) on cash flow hedges:			
Commodity derivatives	\$ 8,818	\$ -	(1)
Commodity derivatives	(2,901)	-	(2)
Total gains on cash flow hedges from continuing operations	5,917	-	(3)
Losses on cash flow hedges from discontinued operations	-	(10,376)	(4)
Income tax expense	1,432	-	(5)
Amounts reclassified from accumulated other comprehensive income (loss)	\$ 4,485	\$ (10,376)	

- (1) Revenues
- (2) Costs of goods sold
- (3) Loss from continuing operations before income taxes and income (loss) from equity method investees
- (4) Net loss from discontinued operations, net of income taxes
- (5) Income tax benefit

13. INCOME TAXES

The company records actual income tax expense or benefit during interim periods rather than on an annual effective tax rate method. Certain items are given discrete period treatment and the tax effect of those items are reported in full in the relevant interim period. Green Plains Partners is a limited partnership, which is treated as a flow-through entity for federal income tax purposes and is not subject to federal income taxes. As a result, the consolidated financial statements do not reflect income taxes on pre-tax income or loss attributable to the noncontrolling interest in the partnership.

The CARES Act was signed into law on March 27, 2020. The CARES Act includes several significant business tax provisions including elimination of the taxable limit for certain net operating losses ("NOL"), allow businesses to carry back NOLs arising in 2018, 2019 and 2020 to the five prior tax years, accelerate refunds of previously generated corporate AMT credits, and loosen the business interest limitation under §163(j) from 30% to 50%. The CARES Act also contains an employee retention credit to encourage employers to maintain headcounts even if employees cannot report to work because of issues related to the COVID-19. The company intends to carry back its' 2019 NOL to previous years and has recorded that tax benefit of approximately \$28.4 million in the first quarter.

The company recorded income tax benefit of \$44.3 million for the three months ended March 31, 2020, compared with \$12.9 million for the same periods in 2019. The increase in the amount of the tax benefit recorded for the three months ended March 31, 2020 compared to the same period in 2019 was to record the tax benefit associated with the carry back of the tax NOL generated in 2019 to the 2014 tax year under the newly enacted CARES Act, as well as the release of a previously recorded valuation allowance against the 2019 NOL and other deferred tax assets. The amount of unrecognized tax benefits for uncertain tax positions was \$51.6 million as of March 31, 2020 and December 31, 2019.

The 2020 effective tax rate can be affected by variances in the estimates and amounts of taxable income among the various states, entities and activity types, realization of tax credits, adjustments from resolution of tax matters under review, valuation allowances and the company's assessment of its liability for uncertain tax positions.

14. COMMITMENTS AND CONTINGENCIES

Lease Expense

The company leases certain facilities, parcels of land, and equipment, with remaining terms ranging from less than one year to 17.6 years. The land and facility leases include renewal options. The renewal options are included in the lease term only for those sites or locations in which they are reasonably certain to be renewed. Equipment renewals are not considered reasonably certain to be exercised as they typically renew with significantly different underlying terms.

The components of lease expense are as follows (in thousands):

	Three Months Ended March 31,	
	2020	2019
Lease expense		
Operating lease expense	\$ 4,945	\$ 5,482
Variable lease expense ⁽¹⁾	269	124
Total lease expense	<u>\$ 5,214</u>	<u>\$ 5,606</u>

(1) Represents amounts incurred in excess of the minimum payments required for the handling and unloading of railcars for a certain land lease, offset by railcar lease abatements provided by the lessor when railcars are out of service during periods of maintenance or upgrade.

Supplemental cash flow information related to operating leases is as follows (in thousands):

	Three Months Ended March 31,	
	2020	2019
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	\$ 4,849	\$ 5,484
Right-of-use assets obtained in exchange for lease obligations:		
Operating leases	5,675	-

Supplemental balance sheet information related to operating leases is as follows:

	March 31, 2020	December 31, 2019
Weighted average remaining lease term	6.5 years	6.6 years
Weighted average discount rate	5.43%	5.46%

Aggregate minimum lease payments under the operating lease agreements for the remainder of 2020 and in future years are as follows (in thousands):

Year Ending December 31,	Amount	
2020	\$	14,710
2021		13,136
2022		11,215
2023		7,976
2024		6,157
Thereafter		25,949
Total		79,143
Less: Present value discount		(22,666)
Lease liabilities	\$	56,477

The partnership has additional railcar operating leases that will commence in the second half of 2020 and first half of 2021 to replace expiring leases, with estimated future minimum lease commitments of approximately \$26.6 million and lease terms of five years. The undiscounted amounts are not included in the tables above.

Lease Revenue

As described in *Note 2 – Revenue*, the majority of the partnership’s segment revenue is generated through their storage and throughput services and rail transportation services agreements with Green Plains Trade and are accounted for as lease revenue. Leasing revenues do not represent revenues recognized from contracts with customers under ASC 606, and are accounted for under ASC 842, *Leases*. Lease revenue associated with agreements with Green Plains Trade are eliminated upon consolidation. The remaining lease revenue is not material to the company.

Refer to *Note 2 – Revenue* for further discussion on lease revenue.

Commodities

As of March 31, 2020, the company had contracted future purchases of grain, corn oil, natural gas, ethanol and distillers grains, valued at approximately \$161.4 million.

Legal

The company is currently involved in litigation that has arisen during the ordinary course of business, but does not believe any pending litigation will have a material adverse effect on its financial position, results of operations or cash flows.

15. RELATED PARTY TRANSACTIONS

Green Plains Cattle Company LLC

The company engages in certain related party transactions with GPCC. The company provides a variety of shared services to GPCC, including accounting and finance, payroll and human resources, information technology, legal, communications and treasury activities. The shared services provided by the company and billed to GPCC were \$0.4 million for the three months ended March 31, 2020. The company had \$2.0 million outstanding receivables related to the shared service agreement and expenses paid on behalf of GPCC as of March 31, 2020.

Green Plains Trade Group, a subsidiary of the company, enters into certain sale contracts with GPCC during the normal course of business. Revenues were \$2.9 million for the three months ended March 31, 2020.

Mr. Ejnar Knudsen, a member of the company’s board of directors, has an indirect ownership interest in GPCC of 0.0736% by reason of his ownership in TGAM Agribusiness Fund LP. Based on the purchase price, the value of that ownership interest is approximately \$0.1 million. Mr. Knudsen also is the CEO and partial owner of AGR Partners LLC (AGR) which provides investment advisory services to TGAM Agribusiness Fund LP pursuant to a sub-advisory agreement between AGR Partners LLC and Nuveen Alternative Advisors LLC, which is the investment manager for TGAM Agribusiness Fund LP.

Aircraft Leases

Effective January 1, 2015, the company entered into two agreements with an entity controlled by Wayne Hoovestol for the lease of two aircrafts. Mr. Hoovestol is chairman of the company's board of directors. The company agreed to pay \$9,766 per month for the combined use of up to 125 hours per year of the aircrafts. Flight time in excess of 125 hours per year will incur additional hourly charges. Payments related to these leases totaled \$24 thousand and \$34 thousand during the three months ended March 31, 2020 and 2019, respectively. The company had \$0 in outstanding payables related to these agreements as of March 31, 2020 and \$17 thousand in outstanding payables related to these agreements as of December 31, 2019.

16. EQUITY METHOD INVESTMENTS

Green Plains Cattle Company LLC

On September 9, 2019, Green Plains, TGAM and StepStone announced the formation of a joint venture. Such parties entered into the Second Amended and Restated Limited Liability Company Agreement of GPCC effective as of September 1, 2019. GPCC was previously a wholly owned subsidiary of Green Plains. Green Plains also entered into a Securities Purchase Agreement with TGAM and StepStone, whereby TGAM and StepStone purchased an aggregate of 50% of the membership interests of GPCC from Green Plains. After closing, GPCC is no longer consolidated in the company's consolidated financial statements and the GPCC investment is accounted for using the equity method of accounting. GPCC results prior to its disposition are classified as discontinued operations in our current and prior period financials.

The GPCC investment is accounted for using the equity method of accounting. GPCC conducts the business of the joint venture, including (i) owning and operating the cattle feeding operations (as defined below), and (ii) any other activities approved by GPCC's board of managers. GPCC continues to have the capacity to support 355,000 head of cattle and has approximately 11.7 million bushels of grain storage capacity. Historical GPCC operational results prior to its disposition are recorded as discontinued operations in the consolidated statement of operations.

The company does not consolidate any part of the assets or liabilities or operating results of its equity method investee. The company's share of net income or loss in the investee increases or decreases, as applicable, the carrying value of the investment. With respect to GPCC, the company determined that this entity does not represent a variable interest entity and consolidation is not required. In addition, although the company has the ability to exercise significant influence over the joint venture through board representation and voting rights, all significant decisions require the consent of the other investors without regard to economic interest.

Summarized Financial Information

During the periods ended March 31, 2020 and December 31, 2019, our equity method investees were considered related parties and included:

- Green Plains Cattle Company LLC, a joint venture formed on September 1, 2019, in which we have a 50% noncontrolling interest. See description of GPCC above.
- Optimal Aqua LLC, in which we owned a 50% noncontrolling interest, until the acquisition of the remaining 50% interest during the first quarter of 2020, at which time the company consolidated their results in its consolidated financial statements. Optimal Aqua LLC produces high-quality aquaculture feeds utilizing proprietary techniques and high-protein feed ingredients.
- NLR Energy Logistics LLC, in which the partnership has a 50% noncontrolling interest. NLR Energy Logistics LLC operates a unit train terminal in the Little Rock, Arkansas area with capacity to unload 110-unit cars and provide approximately 100,000 barrels of storage.

Our equity method investments are summarized in the following table (in thousands):

	Ownership as of March 31, 2020	March 31, 2020	December 31, 2019
Green Plains Cattle Company LLC ⁽¹⁾	50%	\$ 126,626	\$ 64,161
Optimal Aqua LLC ⁽²⁾	100%	-	508
NLR Energy Logistics LLC	50%	4,487	4,329
Total		<u>\$ 131,113</u>	<u>\$ 68,998</u>

- (1) The equity method investment in GPCC is impacted by the effect of deferred gains or losses on cattle sale contracts designated in a cash flow hedge relationship. Pre-tax accumulated other comprehensive income for GPCC was \$39.2 million as of March 31, 2020 compared to pre-tax accumulated other comprehensive loss of \$16.2 million as of December 31, 2019.
- (2) The company acquired the remaining 50% share in Optimal Aqua LLC during the first quarter of 2020 at which time the company consolidated their results in its consolidated financial statements.

Earnings from equity method investments were as follows:

	Three Months Ended March 31,	
	2020	2019
Green Plains Cattle Company LLC ⁽¹⁾	\$ 7,808	\$ -
NLR Energy Logistics LLC	158	215
All others	-	(289)
Total income (loss) from equity method investments, net of income taxes	<u>\$ 7,966</u>	<u>\$ (74)</u>
Distributions from equity method investments	<u>\$ 3,247</u>	<u>\$ -</u>
Income (loss) from equity method investments, net of distributions	<u>\$ 4,719</u>	<u>\$ (74)</u>

- (1) Pre-tax equity method earnings of GPCC were \$10.4 million during the three months ended March 31, 2020.

The company reports its proportional share of equity method investment income (loss) in the consolidated statements of operations. The company's share of equity method investees other comprehensive income arising during the period is included in accumulated other comprehensive income (loss) in the accompanying balance sheet.

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

General

The following discussion and analysis provides information we believe is relevant to understand our consolidated financial condition and results of operations. This discussion should be read in conjunction with the consolidated financial statements and notes to the consolidated financial statements contained in this report together with our annual report on Form 10-K for the year ended December 31, 2019.

Cautionary Information Regarding Forward-Looking Statements

Forward-looking statements are made in accordance with safe harbor provisions of the Private Securities Litigation Reform Act of 1995. These statements are based on current expectations that involve a number of risks and uncertainties and do not relate strictly to historical or current facts, but rather to plans and objectives for future operations. These statements may be identified by words such as “anticipate,” “believe,” “continue,” “estimate,” “expect,” “intend,” “outlook,” “plan,” “predict,” “may,” “could,” “should,” “will” and similar expressions, as well as statements regarding future operating or financial performance or guidance, business strategy, environment, key trends and benefits of actual or planned acquisitions.

Factors that could cause actual results to differ from those expressed or implied in the forward-looking statements include, but are not limited to, those discussed in Part I, Item 1A – Risk Factors of our annual report on Form 10-K for the year ended December 31, 2019, Part II, Item 1A – Risk Factors in this report, or incorporated by reference. Specifically, we may experience fluctuations in future operating results due to a number of economic conditions, including: disruption caused by health epidemics, such as the COVID-19 outbreak; competition in the ethanol industry and other industries in which we operate; commodity market risks, including those that may result from weather conditions; financial market risks; counterparty risks; risks associated with changes to government policy or regulation, including changes to tax laws; risks related to acquisition and disposition activities and achieving anticipated results; risks associated with merchant trading; risks related to our equity method investees and other factors detailed in reports filed with the SEC. Additional risks related to Green Plains Partners LP include compliance with commercial contractual obligations, potential tax consequences related to our investment in the partnership and risks disclosed in the partnership’s SEC filings associated with the operation of the partnership as a separate, publicly traded entity.

We believe our expectations regarding future events are based on reasonable assumptions; however, these assumptions may not be accurate or account for all risks and uncertainties. Consequently, forward-looking statements are not guaranteed. Actual results may vary materially from those expressed or implied in our forward-looking statements. In addition, we are not obligated and do not intend to update our forward-looking statements as a result of new information unless it is required by applicable securities laws. We caution investors not to place undue reliance on forward-looking statements, which represent management’s views as of the date of this report or documents incorporated by reference.

Overview

Green Plains is a diversified commodity-processing business with operations that include corn processing, grain handling and storage and commodity marketing and logistics services. The company is one of the leading corn processors in the world and, through its adjacent businesses, is focused on the production of high-protein feed ingredients and export growth opportunities. We are also focused on generating stable operating margins through our risk management strategy. Green Plains Partners LP is our primary downstream logistics provider, storing and delivering the ethanol we produce. We own a 49.0% limited partner interest, a 2.0% general partner interest and all of the partnership’s incentive distribution rights. The public owns the remaining 49.0% limited partner interest. The partnership is consolidated in our financial statements. In addition, Green Plains owns a 50% interest in Green Plains Cattle Company LLC.

We are currently undergoing a number of project initiatives to improve margins. Through our Project 24 initiative, we anticipate reductions in operating expense per gallon across our non-ICM plants as a result of these investments. In addition, through our high-protein initiative, we expect to achieve increased margins per gallon as a result of the ability to produce various high protein animal feed products. The first high-protein installation was completed at our Shenandoah plant during the first quarter of 2020 with shipments of dried product beginning in April 2020. We anticipate the remaining locations will be completed over the course of the next three to four years.

Recent Developments

Impact of COVID-19 and Decline in Oil Demand

We are closely monitoring the impact of COVID-19 on all aspects of our business, including how it will impact our employees, customers, vendors, and business partners. Although we did not incur significant disruptions during the three months ended March 31, 2020 from COVID-19, we are unable to predict the impact that COVID-19 will have on our future financial position and operating results due to numerous uncertainties.

The COVID-19 pandemic and related economic repercussions have created significant volatility, uncertainty, and turmoil in the energy industry. In early March, the Organization of Petroleum Exporting Countries and their allies (collectively, OPEC+) failed to reach an agreement on production levels for crude oil. This was quickly followed by a widespread slowdown in the U.S. and global economy in an effort to slow the COVID-19 pandemic. While OPEC+ agreed in April to cut production, downward pressure on prices has continued and could continue for the foreseeable future. A combination of these events has significantly deteriorated both prices and demand for various energy commodities and motor fuels, including ethanol, which could negatively impact our business. The situation surrounding COVID-19 continues to evolve rapidly and the ultimate duration and impact of the outbreak as well as the continued decline in oil demand remains highly uncertain and subject to change.

While we have instituted work from home arrangements for certain staff members, there has been no adverse effect on our ability to maintain operations, including our financial reporting systems, our internal controls over financial reporting or our disclosure controls and procedures. In addition, to date we have not incurred any material COVID-19 related contingencies.

For further information regarding the impact of COVID-19 and the decline in oil demand on the company, please see Part II, Item 1A, "Risk Factors," in this report, which is incorporated herein by reference.

Results of Operations

During the first quarter of 2020, we continued to experience a weak ethanol margin environment. We maintained an average utilization rate of approximately 85.9% of capacity, resulting in ethanol production of 240.5 mmg for the first quarter of 2020, compared with 155.0 mmg, or 56.0% of capacity, for the same quarter last year. Our operating strategy is to reduce operating expenses, energy usage and water consumption through our Project 24 initiative while running at higher utilization rates in order to achieve improved margins. However, in the current environment, given the significant drop in driving and gasoline demand, we will exercise operational discretion, potentially resulting in reductions in production across the platform, in order to maximize our cash liquidity. As such, it is possible that production could be below minimum volume commitments, depending on various factors that drive each bio-refineries variable contribution margin, including future driving and gasoline demand for the industry.

U.S. Ethanol Supply and Demand

According to the EIA, domestic ethanol production averaged 1.03 million barrels per day during the first quarter of 2020, which was 2% higher than the 1.01 million barrels for the first quarter of last year. Refiner and blender input volume decreased 3% to 858 thousand barrels per day for the first quarter of 2020, compared with 886 thousand barrels per day for the same quarter last year. Gasoline demand for the first quarter of 2020 decreased 348 thousand barrels per day, or 4% compared to the same quarter last year. U.S. domestic ethanol ending stocks increased by approximately 1.7 million barrels, or 7%, to 25.7 million barrels for the first quarter of 2020. At the end of May 2019, the EPA finalized regulatory changes to apply the 1 pound per square inch Reid Vapor Pressure (RVP) waiver that currently applies to E10 during the summer months so that it applies to E15 as well. This removes a significant barrier to wider sales of E15 in the summer months, thus expanding the market for ethanol in transportation fuel. As of March 17, 2020, there were approximately 2,140 retail stations selling E15 in 30 states, up from 2,080 at the beginning of the year, according to Growth Energy.

In March 2020, members of the Organization of Petroleum Exporting Countries and their allies (collectively, OPEC+) failed to reach an agreement on production levels which led to a substantial decrease in oil prices and an increasingly volatile market. While OPEC+ agreed in April to cut production, downward pressure on prices has continued and could continue for the foreseeable future. In addition, with the widespread shutdowns and "shelter in place" orders across the United States also beginning in March 2020 related to the COVID-19 pandemic, driving miles and fuel consumption have been reduced significantly. This has had a similar impact on ethanol demand resulting in the shutdown of approximately 50% of total industry production capacity.

Global Ethanol Supply and Demand

According to the USDA Foreign Agriculture Service, domestic ethanol exports through February 29, 2020 were approximately 0.35 bgy, up 43% from 0.24 bgy for the same period of 2019. Brazil remained the largest export destination for U.S. ethanol, which accounted for 33% of domestic ethanol export volume despite the 20% tariff on U.S. ethanol imports in excess of 150 million liters, or 39.6 million gallons per quarter, imposed in September 2017 by Brazil's Chamber of Foreign Trade, or CAMEX. In a resolution published August 31, 2019, Brazil raised the annual import quota to 750 million duty free liters distributed on a quarterly basis as follows: September to November 100 million liters, December to February 100 million liters, March to May 275 million liters and June to August 275 million liters. In addition, India, Canada, South Korea, and the Netherlands accounted for 18%, 16%, 7%, and 7%, respectively, of U.S. ethanol exports.

On April 1, 2018, China announced it would add an additional 15% tariff to the existing 30% tariff it had earlier imposed on ethanol imports from the United States and Brazil. China later raised the tariff further to 70% as the trade war escalated. In January 2020, China and the United States agreed to certain trade agreements, the impact of which on ethanol are yet to be determined.

The cost to produce the equivalent amount of starch found in sugar from \$3.50-per-bushel corn is 7 cents per pound. The average price of sugar was approximately 13.6 cents per pound during the first quarter of 2020. We currently estimate that net ethanol exports will range from 1.1 billion to 1.5 billion gallons in 2020, excluding any potential exports to China, based on historical demand from a variety of countries and certain countries who seek to improve their air quality and eliminate MTBE from their own fuel supplies.

Year-to-date U.S. distillers grains exports through February 2020, were 1.8 million metric tons, or 22.6% higher than the same period last year, according to the USDA Foreign Agriculture Service. Mexico, South Korea, Indonesia, Thailand, Vietnam and Japan, accounted for approximately 64.5% of total U.S. distillers export volumes.

While African Swine Fever (ASF) may have a positive impact on animal protein demand from the U.S., it may have a negative impact on distillers grains exports and domestic usage. ASF may depress soybean meal demand in China which could make the animal feed more price competitive to distillers grains and allow for substitution of high-protein soybean meal worldwide.

Legislation and Regulation

We are sensitive to government programs and policies that affect the supply and demand for ethanol and other fuels, which in turn may impact the volume of ethanol and other fuels we handle. Various bills have been discussed in the House and Senate which would eliminate the RFS II entirely, eliminate the corn based ethanol portion of the mandate, or make it more difficult to sell fuel blends with higher levels of ethanol. We believe it is unlikely that any of these bills will become law in the current Congress. In addition, the manner in which the EPA administers the RFS II can have a significant impact on the actual amount of ethanol blended into the domestic fuel supply.

Federal mandates and state-level clean fuel programs supporting the use of renewable fuels are a significant driver of ethanol demand in the U.S. Ethanol policies are influenced by concerns for the environment, diversifying our fuel supply, and reducing the country's dependence on foreign oil. Consumer acceptance of flex-fuel vehicles and higher ethanol blends of ethanol in non-flex-fuel vehicles may be necessary before ethanol can achieve further growth in U.S. market share.

Congress first enacted CAFE in 1975 to reduce energy consumption by increasing the fuel economy of cars and light trucks. Flexible-fuel vehicles (FFVs), which are designed to run on a mixture of fuels, including higher blends of ethanol such as E85, receive preferential treatment in the form of CAFE credits. There are approximately 21 million FFVs on the road in the U.S. today, 16 million of which are light duty trucks. FFV credits have been decreasing since 2014 and will be completely phased out in 2020. Absent CAFE preferences, auto manufacturers may not be willing to build flexible-fuel vehicles, which has the potential to slow the growth of E85 markets.

Another important factor is a waiver in the Clean Air Act, known as the One-Pound Waiver, which allows E10 to be sold year-round, even though it exceeds the Reid Vapor Pressure limitation of nine pounds per square inch. At the end of May 2019, the EPA finalized a rule which extended the One-Pound Waiver to E15. This allows E15 to be sold year round to all vehicles model year 2001 and newer. This rule is being challenged in an action filed in Federal District Court for the DC Circuit. However, the One-Pound Waiver is in effect, and for the first time ever, E15 was legally sold to all vehicles model year 2001 and newer during the summer driving season of June 1 to September 15, 2019.

The RFS II has been a driving factor in the growth of ethanol usage in the United States. When the RFS II was established in 2010, the required volume of “conventional” corn-based ethanol to be blended with gasoline was to increase each year until it reached 15.0 billion gallons in 2015, which left the EPA to address existing limitations in both supply (ethanol production) and demand (usage of ethanol blends in older vehicles). On December 19, 2019, the EPA announced the final 2020 RVO for conventional ethanol, which met the 15.0-billion-gallon congressional target.

The EPA has the authority to waive the mandates, in whole or in part, if there is inadequate domestic renewable fuel supply or the requirement severely harms the economy or environment. According to the RFS II, if mandatory renewable fuel volumes are reduced by at least 20% for two consecutive years, the EPA is required to modify, or reset, statutory volumes through 2022 – the year through which the statutorily prescribed volumes run. While conventional ethanol maintained 15 billion gallons, 2019 was the second consecutive year that the total proposed RVO was more than 20% below statutory volumes levels. Thus, the EPA was expected to initiate a reset rulemaking, and modify statutory volumes through 2022, and do so based on the same factors they are to use in setting the RVOs post-2022. These factors include environmental impact, domestic energy security, expected production, infrastructure impact, consumer costs, job creation, price of agricultural commodities, food prices, and rural economic development. However, on December 19, 2019, the EPA announced it would not be moving forward with a reset rulemaking in 2020.

The EPA assigns individual refiners, blenders, and importers the volume of renewable fuels they are obligated to use based on their percentage of total domestic transportation fuel sales. Obligated parties use RINs to show compliance with the RFS II mandated volumes. Ethanol producers assign RINs to renewable fuels and the RINs are detached when the renewable fuel is blended with transportation fuel domestically. Market participants can trade the detached RINs in the open market. The market price of detached RINs affects the price of ethanol in certain markets and influences the purchasing decisions by obligated parties.

On April 15, 2020, five Governors sent a letter to the EPA requesting a general waiver from the RFS due to the drop in demand caused by COVID-19 travel restrictions. They contend that the compliance costs – i.e. cost to purchase RINs – is onerous and could put some refineries out of business. The EPA has 90 days to respond, and as of this filing had indicated only that they are “watching the situation closely, and reviewing the governors’ letter.”

Under the RFS II, a small refinery is defined as one that processes fewer than 75,000 barrels of petroleum per day. Small refineries can petition the EPA for a SRE which, if approved, waives their portion of the annual RVO requirements. The EPA, through consultation with the Department of Energy and the Department of Agriculture, can grant them a full or partial waiver, or deny it outright within 90 days of submittal. The EPA granted significantly more of these waivers for 2016, 2017 and 2018 than they had in the past, totaling 790 million gallons of waived requirements for the 2016 compliance year, 1.82 billion gallons for 2017 and 1.43 billion gallons for 2018. In doing so, the EPA effectively reduced the RFS II mandated volumes for those compliance years by those amounts respectively, and as a result, RIN values have declined significantly.

Biofuels groups have filed a lawsuit in the Court of Appeals for the D.C. Circuit, challenging the 2019 RVO rule over the EPA’s failure to address small refinery exemptions in the rulemaking. This was the first RFS II rulemaking since the expanded use of the exemptions came to light; however, the EPA had declined to cap the number of waivers it grants, and until late 2019, had declined to alter how it accounts for the retroactive waivers in its annual volume calculations. The EPA has a statutory mandate to ensure the volume requirements are met, which are achieved by setting the percentage standards for obligated parties. The EPA’s recent approach accomplished the opposite. Even if all the obligated parties complied with their respective percentage obligations for 2019, the nation’s overall supply of renewable fuel would not meet the total volume requirements set by the EPA. This undermines Congressional intent to increase the consumption of renewable fuels in the domestic transportation fuel supply. Biofuels groups have argued the EPA must therefore adjust its percentage standard calculations to make up for past retroactive waivers and adjust the standards to account for any waivers it reasonably expects to grant in the future.

In a supplemental rulemaking to the 2020 RVO rule, the EPA changed their approach, and for the first time accounted for the gallons that they anticipate they will be waiving from the blending requirements due to small refinery exemptions. To accomplish this, they are adding in the trailing three year average of gallons the Department of Energy recommended be waived, in effect raising the blending volumes across the board in anticipation of waiving the obligations in whole or in part for certain refineries that qualify for the exemptions. Though the EPA has often disregarded the recommendations of the Department of Energy in years past, they stated in the rule their intent to adhere to these recommendations going forward, including granting partial waivers rather than an all or nothing approach. The EPA will be adjudicating the 2020 compliance year small refinery exemption applications in early 2021, but have indicated they will adhere to Department of Energy

recommendations for the 2019 compliance year applications as well, which should be adjudicated in 2020. There were 26 applications pending as of this filing.

On January 24, 2020, the U.S. Court of Appeals for the 10th Circuit ruled on *RFA et. al. vs. EPA* in favor of biofuels interests, overturning EPA's granting of refinery exemptions to three refineries on two separate grounds. The Court agreed that, under the Clean Air Act, refineries are eligible for SREs for a given RVO year only if such exemptions are extensions of exemptions granted in previous RVO years. In this case, the three refineries at issue did not qualify for SREs in the year prior to the year that EPA granted them. They were thus ineligible for additional SRE relief because there were no immediately prior SREs to extend. In addition, the Court agreed that the disproportionate economic hardship prong of SRE eligibility should be determined solely by reference to whether compliance with the RFS II creates such hardship, not whether compliance plus other issues create disproportionate economic hardship. The Court thus vacated EPA's grant of SREs for certain years and remanded the grants back to EPA. The refiners appealed for a rehearing which was denied. It is possible the decision will be appealed to the U.S. Supreme Court. If the decision against the EPA is upheld by the Supreme Court, it is uncertain how the EPA will propose to remedy the situation.

The White House directed the USDA and EPA to move forward with rulemaking to expand access to higher blends of biofuels. This includes funding for infrastructure, labeling changes and allowing E15 to be sold through E10 infrastructure.

In 2017, the D.C. Circuit ruled in favor of biofuel groups against the EPA related to its decision to lower the 2016 volume requirements by 500 million gallons. As a result, the Court remanded to the EPA to make up for the 500 million gallons. Despite this, in the proposed 2020 RVO rulemaking released in July 2019, the EPA stated it does not intend to make up the 500 million gallons as the court directed, citing potential burden on obligated parties. The EPA has indicated that it plans to address this court ordered remand in 2020.

To respond to the COVID-19 health crisis and attempt to offset the subsequent economic damage, Congress passed the Coronavirus Aid, Relief and Economic Security Act (CARES Act) in late March 2020. It created and funded multiple programs that have impacted or could impact our industry. The USDA was given additional resources for the Commodity Credit Corporation (CCC) and they are using those funds to provide direct payments to farmers, including corn farmers from whom we purchase most of our feedstock for ethanol production. Similar to the trade aid payments made by the USDA over the past two years, this cash injection for farmers could cause them to delay marketing decisions and increase the price we have to pay to purchase the corn. The USDA did not include any CCC funds for ethanol plants as of this filing.

The CARES Act also provided for the Small Business Administration (SBA) to assist companies with fewer than 500 employees, and for some North American Industry Classification System (NAICS) codes, 1,000 employees, and keep them from laying off workers. The Paycheck Protection Program (PPP) was created and quickly paid out all of the funds appropriated, including some to farmers and to ethanol plants with fewer than 1,000 employees. This could create a competitive imbalance in the marketplace, and for farmers, like the CCC funds, incentivize them to delay marketing corn. The PPP had its authorization increased by \$321 billion in April.

The CARES Act also directed the Treasury Department to create programs to support medium-sized businesses, with fewer than 1,000 employees in the case of our business, however we did not qualify for these PPP funds from SBA. The "Main Street" programs provide low interest loans to qualifying companies and we are awaiting the Treasury Department final guidelines to determine if we qualify.

Ethanol is the primary ingredient in hand sanitizer. The CARES Act also provided a tax exclusion on the shipment of un-denatured ethanol for use in manufacturing hand sanitizer. The FDA has provided expanded guidance to allow for more denaturants to be used in ethanol intended for hand sanitizer production, and has expanded the grades of ethanol allowed for the duration of the public health crisis.

Government actions abroad can significantly impact the demand for U.S. ethanol. In September 2017, China's National Development and Reform Commission, the National Energy Agency and 15 other state departments issued a joint plan to expand the use and production of biofuels containing up to 10% ethanol by 2020. China, the number three importer of U.S. ethanol in 2016, imported negligible volumes during 2018 and 2019 due to a 30% tariff on U.S. ethanol, which increased to 70% in early 2018. There is no assurance that China's joint plan to expand blending to 10% will be carried to fruition, nor that it will lead to increased imports of U.S. ethanol in the near term. Ethanol is included as an agricultural commodity under the "Phase I" agreement with China, wherein they are to purchase upwards of \$40 billion in agricultural commodities from the U.S. in both 2020 and 2021.

In Brazil, the Secretary of Foreign Trade issued an official written resolution, imposing a 20% tariff on U.S. ethanol imports in excess of 150 million liters, or 39.6 million gallons per quarter in September 2017. The initial ruling was valid for two years; however, it was extended at the end of August 2019 for an additional year. On an annual basis, Brazil will now allow into the country 750 million duty free liters distributed on a quarterly basis as follows: September to November 100 million liters, December to February 100 million liters, March to May 275 million liters and June to August 275 million liters.

Our exports also face tariffs, rate quotas, countervailing duties, and other hurdles in the European Union, India, Peru, and elsewhere, which limits the ability to compete in some markets.

In June 2017, the Energy Regulatory Commission of Mexico (CRE) approved the use of 10% ethanol blends, which was challenged by multiple lawsuits, of which several were dismissed. The remaining four cases follow one of two tracks: 1) to determine the constitutionality of the CRE regulation, or 2) to determine the benefits, or lack thereof, of introducing E10 to Mexico. An injunction was granted in October 2017, preventing the blending and selling of E10, but was overturned by a higher court in June 2018 making it legal to blend and sell E10 by PEMEX throughout Mexico except for its three largest metropolitan areas. On January 15, 2020, the Mexican Supreme Court ruled that the expedited process for the CRE regulation was unconstitutional, and that after a 180 day period the maximum ethanol blend allowed in the country would revert to 5.8%. There is an effort underway to go through the full regulatory process to allow for 10% blends countrywide, including in the three major metropolitan areas. U.S. ethanol exports to Mexico totaled 31.2 mmg in 2019.

On January 29, 2020, the President signed into law the updated North American Free Trade Agreement, known as the United States Mexico Canada Agreement or USMCA. The pact maintains the duty free access of U.S. agricultural commodities, including ethanol, into Canada and Mexico. The USMCA will take effect on July 1, 2020.

Colombia has banned imports of fuel ethanol for two months, with the possibility of extending the ban one additional month. The Columbian President ordered this emergency decree citing COVID-19 as the rationale. This action is WTO compliant under Article 20 of the GATT. In 2019, the U.S. shipped Columbia 80.2 million gallons of ethanol.

Comparability of our Financial Results

We report the financial and operating performance for the following four operating segments: (1) ethanol production, which includes the production of ethanol, distillers grains and corn oil, (2) agribusiness and energy services, which includes grain handling and storage, commodity marketing and merchant trading for company-produced and third-party ethanol, distillers grains, corn oil, natural gas and other commodities, (3) food and ingredients, which includes food-grade corn oil and (4) partnership, which includes fuel storage and transportation services.

We sold an aggregate 50% membership interest in GPCC to TGAM and StepStone during the third quarter of 2019. After closing, GPCC is no longer consolidated in the company's consolidated financial statements and the GPCC investment is accounted for using the equity method of accounting. The company concluded that the disposition of GPCC met the requirements under ASC 205-20. Therefore, GPCC results for the three months ended March 31, 2019 are classified as discontinued operations.

During the normal course of business, our operating segments do business with each other. For example, our agribusiness and energy services segment procures grain and natural gas and sells products, including ethanol, distillers grains and corn oil of our ethanol production segment. Our partnership segment provides fuel storage and transportation services for our agribusiness and energy services segment. These intersegment activities are treated like third-party transactions with origination, marketing and storage fees charged at estimated market values. Consequently, these transactions affect segment performance; however, they do not impact our consolidated results since the revenues and corresponding costs are eliminated.

Corporate activities include selling, general and administrative expenses, consisting primarily of compensation, professional fees and overhead costs not directly related to a specific operating segment. When we evaluate segment performance, we review the following segment information as well as earnings before interest, income taxes, depreciation and amortization, excluding amortization of operating lease right-of-use assets and amortization of debt issuance costs, or EBITDA.

The company also owns a 90.0% interest in BioProcess Algae, a joint venture formed in 2008. Beginning April 1, 2016, we consolidate the financial results of BioProcess Algae, and record a noncontrolling interest for the economic interest in the joint venture held by others.

As of March 31, 2020, we, together with our subsidiaries, own a 49.0% limited partner interest and a 2.0% general partner interest in the partnership and own all of the partnership's incentive distribution rights, with the remaining 49.0% limited partner interest owned by public common unitholders. We consolidate the financial results of the partnership, and record a noncontrolling interest for the economic interest in the partnership held by the public common unitholders.

Segment Results

The selected operating segment financial information are as follows (in thousands):

	Three Months Ended March 31,		%
	2020	2019 ⁽¹⁾	
Revenues:			
Ethanol production:			
Revenues from external customers	\$ 475,700	\$ 270,808	75.7%
Intersegment revenues	25	25	-
Total segment revenues	475,725	270,833	75.7
Agribusiness and energy services:			
Revenues from external customers	155,881	164,076	(5.0)
Intersegment revenues	7,308	5,132	42.4
Total segment revenues	163,189	169,208	(3.6)
Food and ingredients:			
Revenues from external customers	-	1,452	*
Intersegment revenues	-	-	-
Total segment revenues	-	1,452	*
Partnership:			
Revenues from external customers	1,288	2,305	(44.1)
Intersegment revenues	18,983	18,782	1.1
Total segment revenues	20,271	21,087	(3.9)
Revenues including intersegment activity	659,185	462,580	42.5
Intersegment eliminations	(26,316)	(23,939)	9.9
Revenues as reported	\$ 632,869	\$ 438,641	44.3%
	Three Months Ended March 31,		%
	2020	2019 ⁽¹⁾	
Cost of goods sold:			
Ethanol production	\$ 489,150	\$ 293,487	66.7%
Agribusiness and energy services	156,502	159,626	(2.0)
Food and ingredients	-	1,516	*
Intersegment eliminations	(28,424)	(20,238)	40.4
	\$ 617,228	\$ 434,391	42.1%
	Three Months Ended March 31,		%
	2020	2019	
Operating income (loss):			
Ethanol production ⁽¹⁾	\$ (60,781)	\$ (44,192)	37.5%
Agribusiness and energy services	2,560	5,304	(51.7)
Food and ingredients	-	(65)	*
Partnership	12,430	12,551	(1.0)
Intersegment eliminations	2,133	(3,677)	*
Corporate activities	(10,670)	(8,559)	24.7
	\$ (54,328)	\$ (38,638)	40.6%

(1) Operating loss for ethanol production includes a goodwill impairment charge of \$24.1 million for the three months ended March 31, 2020.

	Three Months Ended March 31,		%
	2020	2019	
Depreciation and amortization:			
Ethanol production	15,898	15,340	3.6%
Agribusiness and energy services	553	549	0.7
Partnership	961	985	(2.4)
Corporate activities	668	750	(10.9)
	<u>\$ 18,080</u>	<u>\$ 17,624</u>	2.6%

* Percentage variance not considered meaningful.

We use EBITDA and adjusted EBITDA as segment measures of profitability to compare the financial performance of our reportable segments and manage those segments. EBITDA is defined as earnings before interest expense, income tax expense, including related tax expense of equity method investments, depreciation and amortization excluding the change in right-of-use assets and debt issuance costs. Adjusted EBITDA includes adjustments related to operational results of GPCC prior to its disposition which are recorded as discontinued operations, our proportional share of EBITDA adjustments of our equity method investees and noncash goodwill impairment. We believe EBITDA and adjusted EBITDA are useful measures to compare our performance against other companies. EBITDA and adjusted EBITDA should not be considered an alternative to, or more meaningful than, net income, which is prepared in accordance with GAAP. EBITDA and adjusted EBITDA calculations may vary from company to company. Accordingly, our computation of EBITDA and adjusted EBITDA may not be comparable with a similarly titled measure of other companies.

The following table reconciles net loss from continuing operations including noncontrolling interest to adjusted EBITDA (in thousands):

	Three Months Ended March 31,	
	2020	2019
Net loss from continuing operations including noncontrolling interest	\$ (10,347)	\$ (33,402)
Interest expense	9,697	9,731
Income tax benefit, net of equity method income tax expense	(41,798)	(12,943)
Depreciation and amortization ⁽¹⁾	18,080	17,624
EBITDA	(24,368)	(18,990)
EBITDA adjustments related to discontinued operations	-	322
Proportional share of EBITDA adjustments to equity method investees	2,937	331
Noncash goodwill impairment	24,091	-
Adjusted EBITDA	<u>\$ 2,660</u>	<u>\$ (18,337)</u>

(1) Excludes the change in operating lease right-of-use assets and amortization of debt issuance costs.

The following table reconciles segment EBITDA to consolidated adjusted EBITDA (in thousands):

	Three Months Ended March 31,		%
	2020	2019	
Adjusted EBITDA:			
Ethanol production	\$ (44,125)	\$ (28,503)	54.8%
Agribusiness and energy services	3,128	5,862	(46.6)
Food and ingredients	-	(64)	*
Partnership	13,548	13,771	(1.6)
Intersegment eliminations	2,133	(3,677)	*
Corporate activities ⁽¹⁾	948	(6,379)	*
EBITDA	(24,368)	(18,990)	28.3
EBITDA adjustments related to discontinued operations	-	322	*
Proportional share of EBITDA adjustments to equity method investees	2,937	331	*
Noncash goodwill impairment	24,091	-	*
Adjusted EBITDA	<u>\$ 2,660</u>	<u>\$ (18,337)</u>	114.5

(1) Includes corporate expenses, offset by earnings from equity method investments of \$7.8 million.

Three Months Ended March 31, 2020 Compared with the Three Months Ended March 31, 2019*Consolidated Results*

Consolidated revenues increased \$194.2 million for the three months ended March 31, 2020 compared with the same period in 2019 primarily due to higher production volumes of ethanol, distillers grains and corn oil.

Operating loss increased \$15.7 million for the three months ended March 31, 2020 compared with the same period last year primarily due to the pre-tax write-off of the goodwill in the ethanol production segment. Adjusted EBITDA increased \$21.0 million due to equity earnings from the GPCC joint venture as well as higher earnings from our ethanol production segment excluding the goodwill impairment. Interest expense for the three months ended March 31, 2020 was comparable with the same period in 2019. Income tax benefit was \$44.3 million for the three months ended March 31, 2020 compared with \$12.9 million for the same period in 2019. The increase in income tax benefit was primarily due to the utilization of previously recorded tax NOLs in the three month period ended March 31, 2020 as allowed under the provisions of the recently enacted CARES Act.

The following discussion provides greater detail about our first quarter segment performance.

Ethanol Production Segment

Key operating data for our ethanol production segment is as follows:

	Three Months Ended March 31,		% Variance
	2020	2019	
Ethanol sold (thousands of gallons)	240,466	155,040	55.1
Distillers grains sold (thousands of equivalent dried tons)	642	398	61.3
Corn oil sold (thousands of pounds)	62,552	34,983	78.8
Corn consumed (thousands of bushels)	83,883	54,041	55.2

Revenues in our ethanol production segment increased \$204.9 million for the three months ended March 31, 2020 compared with the same period in 2019 primarily due to higher production volumes of ethanol, distillers grains and corn oil.

Cost of goods sold for our ethanol production segment increased \$195.7 million for the three months ended March 31, 2020 compared with the same period last year primarily due to higher production volumes. Operating income decreased \$16.6 million and EBITDA decreased \$15.6 million for the three months ended March 31, 2020 compared with the same period in 2019 primarily due to the goodwill impairment charge recognized in the first quarter of 2020. Excluding the impairment charge, both operating income and EBITDA increased due to improved margins on ethanol production. Depreciation and amortization expense for the ethanol production segment was \$15.9 million for the three months ended March 31, 2020 compared with \$15.3 million for the same period last year.

Agribusiness and Energy Services Segment

Revenues in our agribusiness and energy services segment decreased \$6.0 million while operating income and EBITDA decreased by \$2.7 million for the three months ended March 31, 2020 compared with the same period in 2019. The decrease in revenues was primarily due to a decrease in ethanol, distillers grain and corn oil trading activity, as well as lower average realized prices for ethanol. Operating income and EBITDA decreased primarily as a result of decreased margins.

Food and Ingredients Segment

The food and ingredients segment, which now represents food-grade corn oil production had no activity during the three months ended March 31, 2020.

Partnership Segment

Revenues generated by our partnership segment decreased \$0.8 million for the three months ended March 31, 2020, compared with the same period for 2019. Terminal services revenue decreased \$0.6 million as a result of a \$0.9 million decrease in MVC charges, partially offset by a \$0.3 million increase associated with higher throughput volumes. Revenues generated from rail transportation services decreased \$0.5 million. These decreases were partially offset by an increase of \$0.3 million in trucking and other revenue. Operating income and EBITDA for the three months ended March 31, 2020 were comparable with the same period in 2019.

Intersegment Eliminations

Intersegment eliminations of revenues increased by \$2.4 million for the three months ended March 31, 2020 compared with the same period in 2019 due to increased marketing and corn origination fees within the agribusiness and energy services segment.

Corporate Activities

Operating income was impacted by an increase in operating expenses for corporate activities of \$2.1 million for the three months ended March 31, 2020 compared with the same period in 2019 primarily due to increased selling, general and administrative expenses primarily as a result of personnel costs.

Income Taxes

We recorded income tax benefit of \$44.3 million for the three months ended March 31, 2020, compared with \$12.9 million for the same period in 2019. The increase in the amount of tax benefit recorded for the three months ended March 31, 2020 compared to the same period in 2019 was due to the tax benefit associated with the carry back of the tax NOL generated in 2019 to the 2014 tax year under the newly enacted CARES Act, as well as the release of a previously recorded valuation allowance against the 2019 NOL and other deferred tax assets.

Income from Equity Method Investees

Income from equity method investees increased \$8.0 million for the three months ended March 31, 2020 compared with the same period last year due to earnings from our GPCC joint venture during the current period. Prior to its disposition during the third quarter of 2019, GPCC was a consolidated entity.

Net Income from Discontinued Operations

As previously discussed, we sold an aggregate 50% membership interest in GPCC to TGAM and StepStone during the third quarter of 2019. After closing, GPCC is no longer consolidated in the company's consolidated financial statements and the GPCC investment is accounted for using the equity method of accounting. The company concluded that the disposition of GPCC met the requirements under ASC 205-20. Therefore, GPCC results for the three months ended March 31, 2020 are classified as discontinued operations. Net loss from discontinued operations was \$4.5 million for the three months ended March 31, 2019 which was primarily due to severe winter weather and abnormally negative basis during the first quarter of 2019.

Liquidity and Capital Resources

Our principal sources of liquidity include cash generated from operating activities and bank credit facilities. We fund our operating expenses and service debt primarily with operating cash flows. Capital resources for maintenance and growth expenditures are funded by a variety of sources, including cash generated from operating activities, borrowings under bank credit facilities, or issuance of senior notes or equity. Our ability to access capital markets for debt under reasonable terms depends on our financial condition, credit ratings and market conditions. We believe that our ability to obtain financing at reasonable rates and history of consistent cash flow from operating activities provide a solid foundation to meet our future liquidity and capital resource requirements.

On March 31, 2020, we had \$194.3 million in cash and equivalents, excluding restricted cash, consisting of \$121.0 million held at our parent company and the remainder held at our subsidiaries. Additionally, we had \$11.2 million in restricted cash at March 31, 2020. We also had \$330.6 million available under our committed revolving credit agreements, some of which were subject to restrictions or other lending conditions. Funds at certain subsidiaries are generally required for their ongoing operational needs and restricted from distribution. At March 31, 2020, our subsidiaries had approximately

\$65.5 million of net assets that were not available to us in the form of dividends, loans or advances due to restrictions contained in their credit facilities.

Net cash provided by operating activities for continuing operations was \$17.8 million for the three months ended March 31, 2020 compared with net cash provided by operating activities for continuing operations of \$2.2 million for the same period in 2019. Operating activities compared to the prior year were primarily affected by a decrease in the operating loss, goodwill impairment and changes in working capital when compared to the same period of the prior year. Net cash used in investing activities for continuing operations was \$40.0 million for the three months ended March 31, 2020 compared with net cash used in investing activities for continuing operations of \$6.2 million for the same period in 2019, due primarily to an increase capital expenditures during 2020. Net cash used in financing activities for continuing operations was \$42.3 million for the three months ended March 31, 2020 compared with \$35.0 million for the same period in 2019, primarily due to an increase in share repurchases offset by a decrease in cash dividends and distributions during 2020.

Additionally, Green Plains Trade and Green Plains Grain use revolving credit facilities to finance working capital requirements. We frequently draw from and repay these facilities which results in significant cash movements reflected on a gross basis within financing activities as proceeds from and payments on short-term borrowings.

We incurred capital expenditures of \$38.8 million in the first quarter of 2020 primarily for Project 24 operating expense reduction and high-protein expansion projects at various ethanol plants, and for various maintenance projects. Capital spending for the remainder of 2020 is expected to be between approximately \$15 million and \$20 million for various projects, which are expected to be financed with available borrowings under our credit facilities and cash provided by operating activities.

Our business is highly sensitive to the price of commodities, particularly for corn, ethanol, distillers grains, corn oil and natural gas. We use derivative financial instruments to reduce the market risk associated with fluctuations in commodity prices. Sudden changes in commodity prices may require cash deposits with brokers for margin calls or significant liquidity with little advanced notice to meet margin calls, depending on our open derivative positions. We continuously monitor our exposure to margin calls and believe we will continue to maintain adequate liquidity to cover margin calls from our operating results and borrowings.

For each calendar quarter commencing with the quarter ended September 30, 2015, the partnership agreement requires the partnership to distribute all available cash, as defined, to its partners, including us, within 45 days after the end of each calendar quarter. Available cash generally means all cash and cash equivalents on hand at the end of that quarter less cash reserves established by the general partner, including those for future capital expenditures, future acquisitions and anticipated future debt service requirements, plus all or any portion of the cash on hand resulting from working capital borrowings made subsequent to the end of that quarter. On April 16, 2020, the board of directors of the general partner of the partnership reduced the quarterly cash distribution by 75% to \$0.12 per unit on outstanding common units. This reduction will free up approximately \$33.8 million annually, which the partnership intends to use to reduce debt. The distribution is payable on May 8, 2020, to unitholders of record at the close of business on May 1, 2020.

Our board of directors authorized a share repurchase program of up to \$200 million of our common stock. Under the program, we may repurchase shares in open market transactions, privately negotiated transactions, accelerated share buyback programs, tender offers or by other means. The timing and amount of repurchase transactions are determined by our management based on market conditions, share price, legal requirements and other factors. The program may be suspended, modified or discontinued at any time without prior notice. During the three months ended March 31, 2020, we purchased a total of 880,979 shares of our common stock for approximately \$11.5 million. To date, we have repurchased 7,396,936 of common stock for approximately \$92.8 million under the program.

We believe we have sufficient working capital for our existing operations. A continued sustained period of unprofitable operations, however, may strain our liquidity. We may sell additional assets or equity or borrow capital to improve or preserve our liquidity, expand our business or acquire businesses. We cannot provide assurance that we will be able to secure funding necessary for additional working capital or these projects at reasonable terms, if at all.

Debt

For additional information related to our debt, see *Note 9 – Debt* included as part of the notes to consolidated financial statements and *Note 12 – Debt* included as part of the notes to consolidated financial statements included in our annual report on Form 10-K for the year ended December 31, 2019.

We were in compliance with our debt covenants at March 31, 2020. Based on our forecasts, we believe we will maintain compliance at each of our subsidiaries for the next twelve months or have sufficient liquidity available on a consolidated basis to resolve noncompliance. We cannot provide assurance that actual results will approximate our forecasts or that we will inject the necessary capital into a subsidiary to maintain compliance with its respective covenants. In the event a subsidiary is unable to comply with its debt covenants, the subsidiary's lenders may determine that an event of default has occurred, and following notice, the lenders may terminate the commitment and declare the unpaid balance due and payable.

As outlined in *Note 9 - Debt*, we use LIBOR as a reference rate for certain revolving credit facilities. LIBOR is currently set to be phased out at the end of 2021. At this time, it is not possible to predict the effect of this change or the alternative reference rate to be used. We will need to renegotiate certain credit facilities to determine the interest rate to replace LIBOR with the new standard that is established. As such, the potential effect of any such event on interest expense cannot yet be determined.

Corporate Activities

In 2019, we issued \$115.0 million of 4.00% convertible senior notes due in 2024, or the 4.00% notes. The 4.00% notes are senior, unsecured obligations, with interest payable on January 1 and July 1 of each year, beginning January 1, 2020, at a rate of 4.00% per annum. The initial conversion rate will be 64.1540 shares of our common stock per \$1,000 principal amount of the 4.00% notes, which is equivalent to an initial conversion price of approximately \$15.59 per share of our common stock. The conversion rate will be subject to adjustment upon the occurrence of certain events. In addition, we may be obligated to increase the conversion rate for any conversion that occurs in connection with certain corporate events, including our calling the 4.00% notes for redemption. We may settle the 4.00% notes in cash, common stock or a combination of cash and common stock. At March 31, 2020, the outstanding principal balance was \$84.8 million on the 4.00% notes.

In August 2016, we issued \$170.0 million of 4.125% convertible senior notes due in 2022, or 4.125% notes, which are senior, unsecured obligations with interest payable on March 1 and September 1 of each year. Prior to March 1, 2022, the 4.125% notes are not convertible unless certain conditions are satisfied. The initial conversion rate is 35.7143 shares of common stock per \$1,000 of principal which is equal to a conversion price of approximately \$28.00 per share. The conversion rate is subject to adjustment upon the occurrence of certain events, including when the quarterly cash dividend exceeds \$0.12 per share. We may settle the 4.125% notes in cash, common stock or a combination of cash and common stock. At March 31, 2020, the outstanding principal balance was \$151.0 million on the 4.125% notes.

Ethanol Production Segment

We have small equipment financing loans, finance leases on equipment or facilities, and other forms of debt financing.

Agribusiness and Energy Services Segment

Green Plains Trade has a \$300.0 million senior secured asset-based revolving credit facility to finance working capital up to the maximum commitment based on eligible collateral, which matures in July of 2022. This facility can be increased by up to \$70.0 million with agent approval. Advances are subject to variable interest rates equal to a daily LIBOR rate plus 2.25% or the base rate plus 1.25%. The unused portion of the credit facility is also subject to a commitment fee of 0.375% per annum. At March 31, 2020, the outstanding principal balance was \$61.2 million on the facility and the interest rate was 2.48%.

Green Plains Grain has a \$100.0 million senior secured asset-based revolving credit facility to finance working capital up to the maximum commitment based on eligible collateral, which matures in June of 2022. This facility can be increased by up to \$75.0 million with agent approval and up to \$50.0 million for seasonal borrowings. Total commitments outstanding under the facility cannot exceed \$225.0 million. At March 31, 2020, the outstanding principal balance was \$78.0 million on the facility and the interest rate was 3.94%.

Green Plains Grain has entered into short-term inventory financing agreements with a financial institution. The company has accounted for the agreements as short-term notes, rather than sales, and has elected the fair value option to offset fluctuations in market prices of the inventory. The company had no short-term notes payable related to these inventory financing agreements as of March 31, 2020.

Green Plains Commodity Management has an uncommitted \$30.0 million revolving credit facility which matures April 30, 2023 to finance margins related to its hedging programs. Advances are subject to variable interest rates equal to LIBOR plus 1.75%. At March 31, 2020, the outstanding principal balance was \$27.8 million on the facility and the interest rate was 2.25%.

Partnership Segment

Green Plains Partners, through a wholly owned subsidiary, has a \$200.0 million revolving credit facility, which matures on July 1, 2020, to fund working capital, acquisitions, distributions, capital expenditures and other general partnership purposes. At March 31, 2020, the outstanding principal balance of the facility was \$130.2 million and our interest rate was 3.95%.

The revolving credit facility, which is supported by a group of financial institutions, will mature on July 1, 2020 unless extended by agreement of the lenders or replaced by another funding source. We are currently working with the existing lender group to extend the credit facility. While we have not yet formalized the credit facility or secured additional funding necessary to repay the loan, we believe it is probable that we will source appropriate funding given our consistent and stable fee-based cash flows, ongoing profitability, low debt leverage and history of obtaining financing on reasonable commercial terms. In the unlikely scenario that the partnership is unable to refinance its debt with the lenders, the partnership will consider other financing sources, including but not limited to, the restructuring or issuance of new debt with a different lending group, the issuance of additional common units, or other measures.

Contractual Obligations

Contractual obligations as of March 31, 2020 were as follows (in thousands):

Contractual Obligations	Payments Due By Period				
	Total	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years
Long-term and short-term debt obligations ⁽¹⁾	\$ 598,712	\$ 297,828	\$ 170,781	\$ 115,753	\$ 14,350
Interest and fees on debt obligations ⁽²⁾	54,998	19,313	21,260	7,837	6,588
Operating lease obligations ⁽³⁾	79,143	19,130	23,002	12,815	24,196
Other	11,873	4,972	4,194	1,624	1,083
Purchase obligations:					
Forward grain purchase contracts ⁽⁴⁾	67,996	65,257	2,095	644	-
Other commodity purchase contracts ⁽⁵⁾	93,372	71,406	21,700	266	-
Total contractual obligations	\$ 906,094	\$ 477,906	\$ 243,032	\$ 138,939	\$ 46,217

(1) Includes the current portion of long-term debt and future finance lease obligations and excludes the effect of any debt discounts and issuance costs.

(2) Interest amounts are calculated over the terms of the loans using current interest rates, assuming scheduled principal and interest amounts are paid pursuant to the debt agreements. Includes administrative and/or commitment fees on debt obligations.

(3) Operating lease costs are primarily for railcars and office space.

(4) Purchase contracts represent index-priced and fixed-price contracts. Index purchase contracts are valued at current quarter-end prices.

(5) Includes fixed-price ethanol, dried distillers grains and natural gas purchase contracts.

Critical Accounting Policies and Estimates

Key accounting policies, including those relating to revenue recognition, impairment of long-lived assets and goodwill, derivative financial instruments, and accounting for income taxes, are impacted significantly by judgments, assumptions and estimates used in the preparation of the consolidated financial statements. Information about our critical accounting policies and estimates are included in our annual report on Form 10-K for the year ended December 31, 2019.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

We use various financial instruments to manage and reduce our exposure to various market risks, including changes in commodity prices and interest rates. We conduct all of our business in U.S. dollars and are not currently exposed to foreign currency risk.

Interest Rate Risk

We are exposed to interest rate risk through our loans which bear interest at variable rates. Interest rates on our variable-rate debt are based on the market rate for the lender's prime rate or LIBOR. A 10% increase in interest rates would affect our interest cost by approximately \$1.0 million per year. At March 31, 2020, we had \$545.0 million in debt, \$297.2 million of which had variable interest rates.

For additional information related to our debt, see *Note 9 – Debt* included as part of the notes to consolidated financial statements and *Note 12 – Debt* included as part of the notes to consolidated financial statements included in our annual report on Form 10-K for the year ended December 31, 2019.

Commodity Price Risk

Our business is highly sensitive to commodity price risk, particularly for ethanol, corn, distillers grains, corn oil and natural gas. Ethanol prices are sensitive to world crude oil supply and demand, the price of crude oil, gasoline and corn, the price of substitute fuels, refining capacity and utilization, government regulation and consumer demand for alternative fuels. Corn prices are affected by weather conditions, yield, changes in domestic and global supply and demand, and government programs and policies. Distillers grains prices are impacted by livestock numbers on feed, prices for feed alternatives and supply, which is associated with ethanol plant production. Natural gas prices are influenced by severe weather in the summer and winter and hurricanes in the spring, summer and fall. Other factors include North American energy exploration and production, and the amount of natural gas in underground storage during injection and withdrawal seasons.

To reduce the risk associated with fluctuations in the price of ethanol, corn, distillers grains, corn oil, and natural gas, at times we use forward fixed-price physical contracts and derivative financial instruments, such as futures and options executed on the Chicago Board of Trade, the New York Mercantile Exchange and the Chicago Mercantile Exchange. We focus on locking in favorable operating margins, when available, using a model that continually monitors market prices for corn, natural gas and other inputs relative to the price for ethanol and distillers grains at each of our production facilities. We create offsetting positions using a combination of forward fixed-price purchases, sales contracts and derivative financial instruments. As a result, we frequently have gains on derivative financial instruments that are offset by losses on forward fixed-price physical contracts or inventories and vice versa. Our results are impacted by a mismatch of gains or losses associated with the derivative instrument during a reporting period when the physical commodity purchases or sale has not yet occurred. During the three months ended March 31, 2020, revenues included net gains of \$54.2 million and cost of goods sold included net gains of \$2.5 million associated with derivative financial instruments.

Ethanol Production Segment

In the ethanol production segment, net gains and losses from settled derivative instruments are offset by physical commodity purchases or sales to achieve the intended operating margins. To reduce commodity price risk caused by market fluctuations, we enter into exchange-traded futures and options contracts that serve as economic hedges.

Our exposure to market risk, which includes the impact of our risk management activities resulting from our fixed-price purchase and sale contracts and derivatives, is based on the estimated net income effect resulting from a hypothetical 10% change in price for the next 12 months starting on March 31, 2020, which is as follows (in thousands):

Commodity	Estimated Total Volume Requirements for the Next 12 Months (1)	Unit of Measure	Net Income Effect of Approximate 10% Change in Price
Ethanol	1,123,000	Gallons	\$ 77,859
Corn	387,000	Bushels	\$ 106,095
Distillers grains	2,900	Tons (2)	\$ 32,231
Corn oil	292,000	Pounds	\$ 4,835
Natural gas	31,200	MmBTU	\$ 4,787

(1) Estimated volumes assume production at full capacity.

(2) Distillers grains quantities are stated on an equivalent dried ton basis.

Agribusiness and Energy Services Segment

In the agribusiness and energy services segment, our inventories, physical purchase and sale contracts and derivatives are marked to market. To reduce commodity price risk caused by market fluctuations for purchase and sale commitments of grain and grain held in inventory, we enter into exchange-traded futures and options contracts that serve as economic hedges.

The market value of exchange-traded futures and options used for hedging are highly correlated with the underlying market value of grain inventories and related purchase and sale contracts for grain. The less correlated portion of inventory and purchase and sale contract market values, known as basis, is much less volatile than the overall market value of exchange-traded futures and tends to follow historical patterns. We manage this less volatile risk by constantly monitoring our position relative to the price changes in the market. Inventory values are affected by the month-to-month spread in the futures markets. These spreads are also less volatile than overall market value of our inventory and tend to follow historical patterns, but cannot be mitigated directly. Our accounting policy for futures and options, as well as the underlying inventory held for sale and purchase and sale contracts, is to reflect their current market values and include gains and losses in the consolidated statement of operations.

Our daily net commodity position consists of inventories related to purchase and sale contracts and exchange-traded contracts. The fair value of our position was approximately \$0.8 million for grain at March 31, 2020. Our market risk at that date, based on the estimated net income effect resulting from a hypothetical 10% change in price, was approximately \$58 thousand.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures designed to ensure information that must be disclosed in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to management, as appropriate, to allow timely decisions regarding required financial disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. Management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Under the supervision and participation of our chief executive officer and chief financial officer, management carried out an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of March 31, 2020 as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act and concluded that our disclosure controls and procedures were effective.

Changes in Internal Control over Financial Reporting

Management is responsible for establishing and maintaining effective internal control over financial reporting to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of our consolidated financial statements for external purposes in accordance with U.S. generally accepted accounting principles. There were no material changes in our internal control over financial reporting that occurred during the period covered by this report that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II – OTHER INFORMATION

Item 1. Legal Proceedings.

We are currently involved in litigation that has arisen during the ordinary course of business. We do not believe this litigation will have a material adverse effect on our financial position, results of operations or cash flows.

Item 1A. Risk Factors.

Investors should carefully consider the discussion of risks and the other information in our annual report on Form 10-K for the year ended December 31, 2019, in Part I, Item 1A, “Risk Factors,” and the discussion of risks and other information in Part I, Item 2, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” under “Cautionary Information Regarding Forward-Looking Statements,” of this report. Investors should also carefully consider the discussion of risks with the partnership under the heading “Risk Factors” and other information in their annual report on Form 10-K for the year ended December 31, 2019. Although we have attempted to discuss key factors, our investors need to be aware that other risks may prove to be important in the future. New risks may emerge at any time and we cannot predict such risks or estimate the extent to which they may affect our financial performance. The following risk factors supplement and/or update risk factors previously disclosed and should be considered in conjunction with the other information included in, or incorporated by reference in, this quarterly report on Form 10-Q.

Our business may be adversely impacted by the recent COVID-19 outbreak.

The recent outbreak of the coronavirus or COVID-19, which has been declared by the World Health Organization to be a pandemic, has spread across the globe and is impacting worldwide economic activity. COVID-19 poses a risk on all aspects of our business, including how it will impact our employees, customers, vendors, and business partners. We are unable to predict the impact that COVID-19 will have on our future financial position and operating results, due to numerous uncertainties. These uncertainties include, but are not limited to:

- the severity of the virus;
- the duration of the outbreak;
- federal, state or local governmental regulations or other actions which could include limitations on our operations;
- the effect on customer demand resulting in a decline in the demand for our products;
- impacts on our supply chain and potential limitations of supply of our feedstocks;
- interruptions of our distribution systems and delays in the delivery of our products;
- the health of our workforce, and our ability to meet staffing needs which is vital to our operations; and
- volatility in the credit and financial markets.

We are actively managing our response in collaboration with customers, government officials, team members and business partners and assessing potential impacts to our future financial position and operating results, as well as adverse developments in our business. It is not possible for us to predict whether there will be additional government-mandated shelter-in-place and similar government orders that could affect our business, how long the existing orders will remain in place, and how these measures will impact our operations.

The ability or willingness of OPEC and other oil exporting nations to set and maintain production levels has a significant impact on oil and natural gas commodity prices.

The Organization of Petroleum Exporting Countries and their allies (collectively, OPEC+), is an intergovernmental organization that seeks to manage the price and supply of oil on the global energy market. Actions taken by OPEC+ members, including those taken alongside other oil exporting nations, have a significant impact on global oil supply and pricing. For example, OPEC+ and certain other oil exporting nations have previously agreed to take measures, including production cuts, to support crude oil prices. In March 2020, members of OPEC+ considered extending and potentially increasing these oil production cuts, however these negotiations were unsuccessful. As a result, Saudi Arabia announced an immediate reduction in export prices and Russia announced that all previously agreed oil production cuts will expire on April 1, 2020. These actions led to an immediate and steep decrease in oil prices. There can be no assurance that OPEC+ members and other oil exporting nations will agree to future production cuts or other actions to support and stabilize oil prices, nor can

there be any assurance that they will not further reduce oil prices or increase production. Uncertainty regarding future actions to be taken by OPEC+ members or other oil exporting countries could lead to increased volatility in the price of oil, which could adversely affect our business, future financial condition and results of operations.

The partnership's revolving credit facility includes restrictions that may limit their ability to finance future operations, meet their capital needs or expand their business. In addition, the partnership's revolving credit facility matures on July 1, 2020 and we may not be able to renew, extend or replace the expiring facility. If we fail to comply with covenants in the partnership's revolving credit facility or if the facility is terminated, the partnership may be required to repay its indebtedness thereunder, which may have an adverse effect on their liquidity.

The partnership is dependent upon the earnings and cash flow generated by their operations in order to meet their debt service obligations and to allow them to pay cash distributions to its unitholders. The operating and financial restrictions and covenants in their revolving credit facility or in any future financing agreements could restrict their ability to finance future operations or capital needs or to expand or pursue their business activities, which may, in turn, limit their ability to pay cash distributions to their unitholders. For example, the revolving credit facility restricts the partnership's ability to, among other things:

- make certain cash distributions;
- incur certain indebtedness;
- create certain liens;
- make certain investments;
- merge or sell certain of their assets; and
- expand the nature of their business.

Furthermore, the revolving credit facility contains covenants requiring them to maintain certain financial ratios.

The provisions of the revolving credit facility may affect their ability to obtain future financing and pursue attractive business opportunities and their flexibility in planning for, and reacting to, changes in business conditions. In addition, a failure to comply with the provisions of their revolving credit facility could result in an event of default that could enable their lenders, subject to the terms and conditions of their revolving credit facility, to declare the outstanding principal of that debt, together with accrued interest, to be immediately due and payable and/or to proceed against the collateral granted to them to secure such debt. If there is a default or event of default under their debt the payment of their debt is accelerated, defaults under their other debt instruments, if any, may be triggered, and their assets may be insufficient to repay such debt in full. Therefore, the holders of their units could experience a partial or total loss of their investment.

The partnership's revolving credit facility matures on July 1, 2020, and any outstanding balance is due in full on that date. As of March 31, 2020, the partnership had an outstanding principal balance of \$130.2 million under the credit facility. The ability to renew the credit facility, refinance the debt or otherwise repay the outstanding debt prior to maturity is dependent upon capital/credit market conditions as well as their financial condition, operating results and cash flows, all of which are subject to prevailing economic and competitive conditions in addition to financial, business, legislative, governmental, political, regulatory and other factors beyond their control. Therefore, the partnership can give no assurance that they will be able to renew the credit facility or refinance the debt on terms favorable to them, or at all, or that they will otherwise be able to repay the credit facility obligations in full by the maturity date. In such event, they could face substantial liquidity problems, which could cause a materially adverse impact on its results of operations, cash flows and ability to make distributions to its unitholders.

Future demand for ethanol is uncertain and changes in federal mandates, public perception, consumer acceptance and overall consumer demand for transportation fuel could affect demand.

While many trade groups, academics and government agencies support ethanol as a fuel additive that promotes a cleaner environment, others claim ethanol production consumes considerably more energy, emits more greenhouse gases than other fuels and depletes water resources. While we do not agree, some studies suggest ethanol produced from corn is less efficient than ethanol produced from switch grass or wheat grain. Others claim corn-based ethanol negatively impacts consumers by causing the prices of meat and other food derived from corn-consuming livestock to increase. Ethanol critics also contend the industry redirects corn supplies from international food markets to domestic fuel markets, and contributes to land use change domestically and abroad.

There are limited markets for ethanol beyond the federal mandates. We believe further consumer acceptance of E15 and E85 fuels may be necessary before ethanol can achieve significant market share growth. Discretionary and E85 blending are important secondary markets. Discretionary blending is often determined by the price of ethanol relative to gasoline, and availability to consumers. When discretionary blending is financially unattractive, the demand for ethanol may be reduced.

Demand for ethanol is also affected by overall demand for transportation fuel, which is affected by cost, number of miles traveled and vehicle fuel economy. Miles traveled typically increases during the spring and summer months related to vacation travel, followed closely behind the fall season due to holiday travel. Global events, such as COVID-19, have greatly decreased miles traveled and in turn, the demand for ethanol. Consumer demand for gasoline may be impacted by emerging transportation trends, such as electric vehicles or ride sharing. Additionally, factors such as over-supply of ethanol, which has been the case for some time, could continue to negatively impact our business. Reduced demand for ethanol may depress the value of our products, erode its margins, and reduce our ability to generate revenue or operate profitably.

Our insurance policies do not cover all losses, costs or liabilities that we may experience, and insurance companies that currently insure companies in the energy industry may cease to do so or substantially increase premiums.

We are insured under property, liability and business interruption policies, subject to the deductibles and limits under those policies. We have acquired insurance that we believe to be adequate to prevent loss from material foreseeable risks. However, events may occur for which no insurance is available or for which insurance is not available on terms that are acceptable. Loss from an event, such as, but not limited to war, riots, pandemics, terrorism or other risks, may not be insured and such a loss may have a material adverse effect on our operations, cash flows and financial position.

Certain of our ethanol production plants and our related storage tanks, as well as certain of our fuel terminal facilities are located within recognized seismic and flood zones. We believe that the design of these facilities have been modified to fortify them to meet structural requirements for those regions of the country. We have also obtained additional insurance coverage specific to earthquake and flood risks for the applicable plants and fuel terminals. However, there is no assurance that any such facility would remain in operation if a seismic or flood event were to occur.

Additionally, our ability to obtain and maintain adequate insurance may be adversely affected by conditions in the insurance market over which we have no control. In addition, if we experience insurable events, our annual premiums could increase further or insurance may not be available at all. If significant changes in the number or financial solvency of insurance underwriters for the ethanol industry occur, we may be unable to obtain and maintain adequate insurance at a reasonable cost. We cannot assure our unitholders that we will be able to renew our insurance coverage on acceptable terms, if at all, or that we will be able to arrange for adequate alternative coverage in the event of non-renewal. The occurrence of an event that is not fully covered by insurance, the failure by one or more insurers to honor its commitments for an insured event or the loss of insurance coverage could have a material adverse effect on our financial condition, results of operations, cash flows and ability of the partnership to make distributions to its unitholders.

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

Employees surrender shares when restricted stock grants are vested to satisfy statutory minimum required payroll tax withholding obligations.

The following table lists the shares that were surrendered during the first quarter of 2020:

Period	Total Number of Shares Withheld for Employee Awards	Average Price Paid per Share
January 1 - January 31	-	\$ -
February 1 - February 29	37,115	13.56
March 1 - March 31	76,476	9.37
Total	113,591	\$ 10.74

Our board of directors authorized a share repurchase program of up to \$200 million of our common stock. Under this program, we may repurchase shares in open market transactions, privately negotiated transactions, accelerated buyback programs, tender offers or by other means. The timing and amount of the transactions are determined by management based on its evaluation of market conditions, share price, legal requirements and other factors. The program may be suspended, modified or discontinued at any time, without prior notice.

The following table lists the shares repurchased under the share repurchase program during the first quarter of 2020.

Period	Number of Shares Purchased	Average Price Paid per Share	Number of Shares Repurchased as Part of Repurchase Program	Total Number of Shares Repurchased as Part of Repurchase Program	Approximate Dollar Value of Shares that may yet be Repurchased under the Program ⁽²⁾ (in thousands)
January 1 - January 31	731,774	\$ 12.99	731,774	7,247,731	\$ 109,120
February 1 - February 29	149,205	13.08	149,205	7,396,936	107,165
March 1 - March 31	30,000 ⁽¹⁾	4.79	-	7,396,936	107,165
Total	910,979	\$ 12.73	880,979	7,396,936	\$ 107,165

(1) Includes one open market purchase by Eugene S. Edwards, Director, of 30,000 shares at \$4.79 per share on March 20, 2020, as previously disclosed in their Form 4 filing with the SEC.

Since inception, the company has repurchased 7,396,936 shares of common stock for approximately \$92.8 million under the program.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

Exhibit Index

Exhibit No.	Description of Exhibit
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) and Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) and Section 302 of the Sarbanes-Oxley Act of 2002
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101	The following information from Green Plains Inc.'s Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2020, formatted in Inline Extensible Business Reporting Language (iXBRL): (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Operations, (iii) Consolidated Statements of Comprehensive Income, (iv) Consolidated Statements of Cash Flows, and (v) the Notes to Consolidated Financial Statements
104	The cover page from Green Plains Inc.'s Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2020, formatted in iXBRL.

SIGNATURES

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

GREEN PLAINS INC.
(Registrant)

Date: May 6, 2020

By: /s/ Todd A. Becker
Todd A. Becker
President and Chief Executive Officer
(Principal Executive Officer)

Date: May 6, 2020

By: /s/ G. Patrich Simpkins Jr.
G. Patrich Simpkins Jr.
Chief Financial Officer
(Principal Financial Officer)

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO RULE 13a-14(a) AND SECTION 302 OF THE SARBANES OXLEY ACT OF 2002**

I, Todd A. Becker, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Green Plains Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 6, 2020

/s/ Todd A. Becker

Todd A. Becker
President and Chief Executive Officer
(Principal Executive Officer)

**CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO RULE 13a-14(a) AND SECTION 302 OF THE SARBANES OXLEY ACT OF 2002**

I, G. Patrich Simpkins Jr., certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Green Plains Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 6, 2020

/s/ G. Patrich Simpkins Jr.

G. Patrich Simpkins Jr.
Chief Financial Officer
(Principal Financial Officer)

**CERTIFICATION OF CHIEF 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 Quarterly Report of Green Plains Inc. (the “company”) on Form 10-Q for the fiscal quarter ended March 31, 2020, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Todd A. Becker, President and Chief Executive Officer of the company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

Date: May 6, 2020

/s/ Todd A. Becker

Todd A. Becker
President and Chief Executive Officer

**CERTIFICATION OF CHIEF FINANCIAL 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 Quarterly Report of Green Plains Inc. (the “company”) on Form 10-Q for the fiscal quarter ended March 31, 2020, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, G. Patrich Simpkins Jr., Chief Financial Officer of the company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

Date: May 6, 2020

/s/ G. Patrich Simpkins Jr.
G. Patrich Simpkins Jr.
Chief Financial Officer
