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

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FORM 10-Q

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

For the Quarterly Period Ended June 30, 2018

Commission File Number 001-32924

GREEN PLAINS INC.

(Exact name of registrant as specified in its charter)

Iowa	**84-1652107**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
1811 Aksarben Drive, Omaha, NE 68106	**(402) 884-8700**
(Address of principal executive offices, including zip code)	(Registrant's telephone number, including area code)

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

☒ Yes ☐ No

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

☒ Yes ☐ No

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

Large accelerated filer ☒ Accelerated filer ☐

Non-accelerated filer ☐ (Do not check if a smaller reporting company)

Smaller reporting company ☐ Emerging growth company ☐

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

Indicate by check mark whether the registrant is a shell company (as defined 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 July 27, 2018, was 41,429,651 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
DKGP	DKGP Energy Terminals LLC
Fleischmann's Vinegar	Fleischmann's Vinegar Company, Inc.
Green Plains Cattle	Green Plains Cattle Company LLC
Green Plains Grain	Green Plains Grain Company LLC
Green Plains Partners; the partnership	Green Plains Partners LP
Green Plains Processing	Green Plains Processing LLC and its subsidiaries
Green Plains Trade	Green Plains Trade Group LLC
Green Plains Commodity Management	Green Plains Commodity Management LLC

Accounting Defined Terms:

AMT	Alternative minimum tax
ASC	Accounting Standards Codification
EBITDA	Earnings before interest, income taxes, depreciation and amortization
EPS	Earnings per share
Exchange Act	Securities Exchange Act of 1934, as amended
FASB	Financial Accounting Standards Board
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

Other Defined Terms:

CAFE	Corporate Average Fuel Economy
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
EISA	Energy Independence and Security Act of 2017, as amended
EPA	U.S. Environmental Protection Agency
MmBtu	Million British Thermal Units
Mmg	Million gallons
MTBE	Methyl tertiary-butyl ether
RBOB	Reformulated blendstock for oxygenate blending
RFS II	Renewable Fuels Standard II
RIN	Renewable identification number
RVO	Renewable volume obligation
U.S.	United States
USDA	U.S. Department of Agriculture

PART 1 – FINANCIAL INFORMATION

Item 1. Financial Statements.

GREEN PLAINS INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

(in thousands, except share amounts)

	June 30, 2018 (unaudited)	December 31, 2017
ASSETS		
Current assets		
Cash and cash equivalents	$ 235,133	$ 266,651
Restricted cash	15,863	45,709
Accounts receivable, net of allowances of $209 and $217, respectively	137,068	151,122
Income taxes receivable	33,891	6,413
Inventories	625,302	711,878
Prepaid expenses and other	14,915	17,808
Derivative financial instruments	30,647	6,890
Total current assets	1,092,819	1,206,471
Property and equipment, net of accumulated depreciation and amortization of $564,395 and $514,585, respectively	1,139,249	1,176,707
Goodwill	182,879	182,879
Other assets	170,826	218,593
Total assets	$ 2,585,773	$ 2,784,650
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	$ 121,573	$ 205,479
Accrued and other liabilities	53,859	63,886
Derivative financial instruments	22,868	12,884
Income taxes payable	-	9,909
Short-term notes payable and other borrowings	457,472	526,180
Current maturities of long-term debt	69,752	67,923
Total current liabilities	725,524	886,261
Long-term debt	768,111	767,396
Deferred income taxes	40,591	56,801
Other liabilities	14,434	15,056
Total liabilities	1,548,660	1,725,514
Commitments and contingencies (Note 14)		
Stockholders' equity		
Common stock, $0.001 par value; 75,000,000 shares authorized; 46,760,696 and 46,410,405 shares issued, and 41,434,804 and 41,084,463 shares outstanding, respectively	47	46
Additional paid-in capital	687,469	685,019
Retained earnings	293,405	325,411
Accumulated other comprehensive loss	(4,208)	(13,110)
Treasury stock, 5,325,892 and 5,325,942 shares, respectively	(55,183)	(55,184)
Total Green Plains stockholders' equity	921,530	942,182
Noncontrolling interests	115,583	116,954
Total stockholders' equity	1,037,113	1,059,136
Total liabilities and stockholders' equity	$ 2,585,773	$ 2,784,650

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 June 30,		Six Months Ended June 30,	
	2018	**2017**	**2018**	**2017**
Revenues				
Product revenues	$ 985,217	$ 884,712	$ 2,028,876	$ 1,770,924
Service revenues	1,620	1,551	3,248	3,023
Total revenues	986,837	886,263	2,032,124	1,773,947
Costs and expenses				
Cost of goods sold (excluding depreciation and amortization expenses reflected below)	910,625	830,019	1,898,960	1,641,915
Operations and maintenance expenses	7,893	8,267	16,293	16,798
Selling, general and administrative expenses	29,731	25,575	55,734	49,357
Depreciation and amortization expenses	26,823	26,188	53,297	52,271
Total costs and expenses	975,072	890,049	2,024,284	1,760,341
Operating income (loss)	11,765	(3,786)	7,840	13,606
Other income (expense)				
Interest income	709	314	1,346	678
Interest expense	(22,021)	(19,430)	(44,149)	(37,926)
Other, net	2,545	1,357	2,479	1,367
Total other expense	(18,767)	(17,759)	(40,324)	(35,881)
Loss before income taxes	(7,002)	(21,545)	(32,484)	(22,275)
Income tax benefit	10,753	9,749	16,780	12,130
Net income (loss)	3,751	(11,796)	(15,704)	(10,145)
Net income attributable to noncontrolling interests	4,745	4,570	9,407	9,818
Net loss attributable to Green Plains	$ (994)	$ (16,366)	$ (25,111)	$ (19,963)
Earnings per share:				
Net loss attributable to Green Plains - basic	$ (0.02)	$ (0.41)	$ (0.63)	$ (0.51)
Net loss attributable to Green Plains - diluted	$ (0.02)	$ (0.41)	$ (0.63)	$ (0.51)
Weighted average shares outstanding:				
Basic	40,194	40,220	40,168	39,326
Diluted	40,194	40,220	40,168	39,326
Cash dividend declared per share	$ 0.12	$ 0.12	$ 0.24	$ 0.24

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 June 30,		Six Months Ended June 30,	
	2018	**2017**	**2018**	**2017**
Net income (loss)	$ 3,751	$ (11,796)	$ (15,704)	$ (10,145)
Other comprehensive income (loss), net of tax:				
Unrealized gains (losses) on derivatives arising during the period, net of tax benefit (expense) of $1,145, $2,026, ($3,971) and $1,058, respectively	(4,277)	(3,418)	12,873	(1,776)
Reclassification of realized gains (losses) on derivatives, net of tax benefit of $185, $824, $365 and $2,672, respectively	(581)	(1,353)	(1,184)	(4,487)
Total other comprehensive income (loss), net of tax	(4,858)	(4,771)	11,689	(6,263)
Comprehensive loss	(1,107)	(16,567)	(4,015)	(16,408)
Comprehensive income attributable to noncontrolling interests	4,745	4,570	9,407	9,818
Comprehensive loss attributable to Green Plains	$ (5,852)	$ (21,137)	$ (13,422)	$ (26,226)

See accompanying notes to the consolidated financial statements.

GREEN PLAINS INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

(unaudited and in thousands)

	Six Months Ended June 30,	
	2018	**2017**
Cash flows from operating activities:		
Net loss	$ (15,704)	$ (10,145)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Depreciation and amortization	53,297	52,271
Amortization of debt issuance costs and debt discount	7,515	7,925
Loss on exchange of 3.25% convertible notes due 2018	-	1,291
Gain on disposal of assets	(2,624)	(1,422)
Deferred income taxes	(23,061)	(12,896)
Stock-based compensation	5,435	5,497
Undistributed equity loss of affiliates	239	75
Other	-	19
Changes in operating assets and liabilities before effects of business combinations:		
Accounts receivable	14,054	12,341
Inventories	88,450	(1,079)
Derivative financial instruments	1,513	(17,236)
Prepaid expenses and other assets	2,797	(9)
Accounts payable and accrued liabilities	(96,295)	(74,435)
Current income taxes	10,540	(1,262)
Other	(297)	1,322
Net cash provided by (used in) operating activities	45,859	(37,743)
Cash flows from investing activities:		
Purchases of property and equipment, net	(14,640)	(27,985)
Acquisition of a business, net of cash acquired	(1,629)	(61,727)
Investments in unconsolidated subsidiaries	(2,253)	(8,849)
Other investing activities	7,500	-
Net cash used in investing activities	(11,022)	(98,561)
Cash flows from financing activities:		
Proceeds from the issuance of long-term debt	42,300	33,800
Payments of principal on long-term debt	(43,370)	(66,339)
Proceeds from short-term borrowings	2,089,208	2,149,950
Payments on short-term borrowings	(2,158,274)	(2,099,929)
Cash payment for exchange of 3.25% convertible notes due 2018	-	(8,523)
Payments of cash dividends and distributions	(20,580)	(19,244)
Payments of loan fees	(2,622)	(1,675)
Payments related to tax withholdings for stock-based compensation	(3,013)	(3,801)
Proceeds from exercise of stock options	150	50
Net cash used in financing activities	(96,201)	(15,711)
Net change in cash, cash equivalents and restricted cash	(61,364)	(152,015)
Cash, cash equivalents and restricted cash, beginning of period	312,360	406,791
Cash, cash equivalents and restricted cash, end of period	$ 250,996	$ 254,776

Continued on the following page

CONSOLIDATED STATEMENTS OF CASH FLOWS

(unaudited and in thousands)

Continued from the previous page

	Six Months Ended June 30, 2018	Six Months Ended June 30, 2017
Reconciliation of total cash, cash equivalents and restricted cash:		
Cash and cash equivalents	$ 235,133	$ 195,442
Restricted cash	15,863	59,334
Total cash, cash equivalents and restricted cash	$ 250,996	$ 254,776
Non-cash financing activity:		
Exchange of 3.25% convertible notes due 2018 for shares of common stock	$ -	$ 47,743
Exchange of common stock held in treasury stock for 3.25% convertible notes due 2018	$ 1	$ 27,356
Supplemental investing and financing activities:		
Assets acquired in acquisitions and mergers, net of cash	$ 1,629	$ 62,209
Less: liabilities assumed	-	(482)
Net assets acquired	$ 1,629	$ 61,727
Supplemental disclosures of cash flow:		
Cash paid (received) for income taxes	$ (3,163)	$ 1,976
Cash paid for interest	$ 36,923	$ 30,314

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. As of June 30, 2018, the company owns a 62.5% limited partner interest and a 2.0% general partner interest in Green Plains Partners LP. Public investors own the remaining 35.5% 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 June 30, 2018 and December 31, 2017, excluding intercompany balances, were $73.2 million and $74.9 million, respectively, and primarily consisted of property and equipment and goodwill. The partnership's consolidated total liabilities as of June 30, 2018 and December 31, 2017, excluding intercompany balances, were $155.1 million and $153.0 million, respectively, which primarily consisted of long-term debt as discussed in *Note 9 – Debt*. The liabilities recognized as a result of consolidating the partnership do not represent additional claims on our general assets. 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, 2017.

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 were reclassified to conform to the current year presentation. These reclassifications did not affect total revenues, costs and expenses, net income (loss) or stockholders' equity.

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, depreciation of property and equipment, carrying value of intangible assets, 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 and distillers grains, and recovery of 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 cattle feeding, vinegar production and food-grade corn oil operations 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. To the degree these segregated balances are cash and cash equivalents, they are considered restricted cash on the consolidated statements of cash flows.

Revenue Recognition

The company recognizes revenue at the point in time when the product or service is transferred to the customer.

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. All other transactions are reported net as either a component of revenue or cost of goods sold, depending on their position as a gain or loss. 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, cattle and vinegar, 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 when 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.

Shipping and Handling Costs

We account for shipping and handling activities related to contracts with customers as costs to fulfill our promise to transfer the associated products. Accordingly, we record customer payments associated with shipping and handling costs as a component of revenue, and classify 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 and vinegar production, and cattle feeding operations. 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, process chemicals, cattle and veterinary supplies. 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 and feedlot utilities, repairs and maintenance, yard expenses 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 sales contracts to attempt to minimize the effect of price changes on grain, natural gas and cattle inventories. 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, cattle, 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, agribusiness and energy services, and food and ingredients segments 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. 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 other 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.

Recent Accounting Pronouncements

Effective January 1, 2018, the company adopted the amended guidance in ASC Topic 606, *Revenue from Contracts with Customers.* Please refer to *Note 2 – Revenue* for further details.

Effective January 1, 2018, the company adopted the amended guidance in ASC Topic 230, *Statement of Cash Flows: Restricted Cash*, which requires amounts generally described as restricted cash and restricted cash equivalents to be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. The amended guidance was applied retrospectively. As a result, net cash used in operating activities for the six months ended June 30, 2017 was adjusted to exclude the change in restricted cash and decreased the previously reported balance by $25.2 million. Net cash provided by financing activities for the six months ended June 30, 2017 was adjusted to exclude the change in restricted cash and decreased the previously reported balance by $18.1 million.

Effective January 1, 2018, the company adopted the amended guidance in ASC Topic 740, *Income Taxes: Intra-Entity Transfers of Assets other than Inventory*, which requires the recognition of current and deferred income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. The amended guidance is required on a modified retrospective basis, with a cumulative-effect adjustment to retained earnings as of the beginning of the year of adoption. The adoption of the guidance did not have an impact to the financial statements.

Effective January 1, 2018, the company adopted the amended guidance in ASC Topic 805, *Business Combinations: Clarifying the Definition of a Business*, which clarifies the definition of a business and provides guidance to assist companies and other reporting organizations evaluate whether transactions should be accounted for as acquisitions or disposals of assets or businesses. The amended guidance will be applied prospectively.

Effective January 1, 2018, the company early adopted the amended guidance in ASC Topic 350, *Intangibles – Goodwill and Other: Simplifying the Test for Goodwill Impairment*, which simplifies the measurement of goodwill by eliminating Step 2 from the goodwill impairment test. The annual goodwill impairment test will be performed by comparing the fair value of a reporting unit with its carrying amount. An impairment charge equal to the amount by which the carrying amount exceeds the reporting unit's fair value, not to exceed the total amount of goodwill allocated to that reporting unit, would be recognized. The amended guidance will be applied prospectively, and used when the annual impairment test is performed in the current year. The company does not believe the new guidance will have a material impact on the consolidated financial statements.

Effective January 1, 2018, the company early adopted the amended guidance in ASC Topic 220, *Income Statement – Reporting Comprehensive Income: Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income,* which allows a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Cuts and Jobs Act. The amendment eliminates the stranded tax effects resulting from the Tax Cuts and Jobs Act and is intended to improve the usefulness of information reported. As a result, the company recorded a $2.8 million reclassification from accumulated other comprehensive income to retained earnings during the first quarter of 2018. It is the company's policy to release income tax effects from accumulated other comprehensive income using the portfolio approach.

Effective January 1, 2019, the company will adopt the amended guidance in ASC Topic 842, *Leases*, which aims to make leasing activities more transparent and comparable, requiring substantially all leases to be recognized by lessees on the balance sheet as a right-of-use asset and corresponding lease liability, including leases currently accounted for as operating leases. The new standard is effective for fiscal years and interim periods within those years, beginning after December 15, 2018. The standard requires a modified retrospective transition approach and allows for early adoption. In July 2018, the FASB issued Accounting Standards Update, *Leases (Topic 842): Targeted Improvements*, which provides an option to apply the transition provisions of the new standard at adoption date instead of the earliest comparative period presented in the financial statements. The company will elect to use this optional transition method.

The company has established an implementation team which continues to review current accounting policies, internal controls, processes, and disclosures that will change as a result of adopting the new standard. The company has gathered information on existing leases to obtain a complete population of leases upon adoption. The company is also working with a third-party vendor to implement a lease accounting system, which will assist in delivering the required accounting changes and disclosures. The new standard will significantly increase right-of-use assets and lease liabilities on the company's consolidated balance sheet, primarily due to operating leases that are currently not recognized on the balance sheet. In addition, it will also require expanded disclosures in the company's consolidated financial statements. The company expects to complete its assessment of the impact of the new guidance on its consolidated financial statements in the second half of 2018.

2. REVENUE

Adoption of ASC Topic 606

On January 1, 2018, the company adopted the amended guidance in ASC Topic 606, *Revenue from Contracts with Customers*, and all related amendments ("new revenue standard") and applied it to all contracts using the modified retrospective transition method. There were no adjustments to the consolidated January 1, 2018 balance sheets for the adoption of the new revenue standard. As such, comparative information has not been restated and continues to be reported under the accounting standards in effect for those periods. In addition, there was no impact of adoption on the consolidated statements of operations or balance sheets for the six months ended June 30, 2018.

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 table disaggregates revenue by major source for the three and six months ended June 30, 2018 (in thousands):

	Three Months Ended June 30, 2018					
	Ethanol Production	Agribusiness & Energy Services	Food & Ingredients	Partnership	Eliminations	Total
Revenues:						
Revenues from contracts with customers under ASC Topic 606:						
Ethanol	$ 634	$ -	$ -	$ -	$ -	$ 634
Distillers grains	62,657	-	-	-	-	62,657
Cattle and vinegar	-	-	222,059	-	-	222,059
Service revenues	-	-	-	1,229	-	1,229
Other	1,201	806	-	-	-	2,007
Intersegment revenues	875	-	38	-	(913)	-
Total revenues from contracts with customers	65,367	806	222,097	1,229	(913)	288,586
Revenues from contracts accounted for as derivatives under ASC Topic 815 (1):						
Ethanol	451,083	106,117	-	-	-	557,200
Distillers grains	49,940	32,706	-	-	-	82,646
Corn oil	19,132	3,488	5,350	-	-	27,970
Grain	337	22,843	-	-	-	23,180
Cattle and vinegar	-	-	(1,522)	-	-	(1,522)
Other	4,272	4,114	-	-	-	8,386
Intersegment revenues	3,344	14,128	-	2,517	(19,989)	-
Total revenues from contracts accounted for as derivatives	528,108	183,396	3,828	2,517	(19,989)	697,860
Leasing revenues under ASC Topic 840 (2)	-	-	-	22,094	(21,703)	391
Total Revenues	$ 593,475	$ 184,202	$ 225,925	$ 25,840	$ (42,605)	$ 986,837

	Six Months Ended June 30, 2018					
	Ethanol Production	Agribusiness & Energy Services	Food & Ingredients	Partnership	Eliminations	Total
Revenues:						
Revenues from contracts with customers under ASC 606:						
Ethanol	$ 3,100	$ -	$ -	$ -	$ -	$ 3,100
Distillers grains	119,902	-	-	-	-	119,902
Cattle and vinegar	-	-	489,475	-	-	489,475
Service revenues	-	-	-	2,447	-	2,447
Other	1,332	1,483	-	-	-	2,815
Intersegment revenues	1,537	-	80	-	(1,617)	-
Total revenues from contracts with customers	125,871	1,483	489,555	2,447	(1,617)	617,739
Revenues from contracts accounted for as derivatives under ASC Topic 815 (1):						
Ethanol	893,656	228,658	-	-	-	1,122,314
Distillers grains	90,401	53,918	-	-	-	144,319
Corn oil	35,602	12,158	7,637	-	-	55,397
Grain	470	37,129	-	-	-	37,599
Cattle and vinegar	-	-	6,884	-	-	6,884
Other	8,556	38,515	-	-	-	47,071
Intersegment revenues	4,635	25,557	-	4,689	(34,881)	-
Total revenues from contracts accounted for as derivatives	1,033,320	395,935	14,521	4,689	(34,881)	1,413,584
Leasing revenues under ASC 840 (2)	-	-	-	44,589	(43,788)	801
Total Revenues	$ 1,159,191	$ 397,418	$ 504,076	$ 51,725	$ (80,286)	$ 2,032,124

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

(2) Leasing revenues do not represent revenues recognized from contracts with customers under ASC Topic 606, and continue to be accounted for under ASC Topic 840, *Leases*.

Payment Terms

The company has standard payment terms, which vary depending upon the nature of the services provided, with the majority falling within 10 to 30 days after transfer of control or completion of services. In instances where the timing of revenue recognition differs from the timing of invoicing, the company has determined that contracts generally do not include a significant financing component.

Contract Liabilities

The company records unearned revenue when consideration is received, or such consideration is unconditionally due, from a customer prior to transferring goods or services to the customer under the terms of service and lease agreements. Unearned revenue from service agreements, which represents a contract liability, is recorded for fees that have been charged to the customer prior to the completion of performance obligations, and is generally recognized in the subsequent quarter. The company expects to recognize all of the unearned revenue associated with service agreements as of June 30, 2018 in the subsequent quarter when the inventory is withdrawn from the partnership's tank storage.

Practical Expedients

Under the new revenue standard, companies may elect various practical expedients upon adoption. As a result, the company elected to recognize the cost for shipping and handling activities that occur after the customer obtains control of the promised goods as fulfillment activities and not when performance obligations are met. The company also elected to exclude sales taxes from transaction prices.

3. ACQUISITIONS

Acquisition of Cattle Feeding Operations

On May 16, 2017, the company acquired two cattle-feeding operations from Cargill Cattle Feeders, LLC for $59.3 million, including certain working capital adjustments. The transaction included the feed yards located in Leoti, Kansas and Eckley, Colorado, which added combined feedlot capacity of 155,000 head of cattle to the company's operations. The transaction was financed using cash on hand. There were no material acquisition costs recorded for the acquisition.

As part of the transaction, the company also entered into a long-term cattle supply agreement with Cargill Meat Solutions Corporation. Under the cattle supply agreement, all cattle placed in the Leoti and Eckley feedlots are sold exclusively to Cargill Meat Solutions under an agreed upon pricing arrangement.

The following is a summary of the assets acquired and liabilities assumed (in thousands):

Amounts of Identifiable Assets Acquired and Liabilities Assumed		
Inventory	$	22,450
Prepaid expenses and other		52
Property and equipment, net		36,960
Current liabilities		(180)
Total identifiable net assets	$	59,282

The amounts above reflect the final purchase price allocation, which included working capital true-up payments by the company of $1.6 million made during the first half of 2018.

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 June 30, 2018		
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Total
Assets:			
Cash and cash equivalents	$ 235,133	$ -	$ 235,133
Restricted cash	15,863	-	15,863
Inventories carried at market	-	58,710	58,710
Unrealized gains on derivatives	-	18,969	18,969
Other assets	114	-	114
Total assets measured at fair value	$ 251,110	$ 77,679	$ 328,789
Liabilities:			
Accounts payable [(1)]	$ -	$ 9,961	$ 9,961
Unrealized losses on derivatives	-	22,868	22,868
Other	-	84	84
Total liabilities measured at fair value	$ -	$ 32,913	$ 32,913

	Fair Value Measurements at December 31, 2017		
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Total
Assets:			
Cash and cash equivalents	$ 266,651	$ -	$ 266,651
Restricted cash	45,709	-	45,709
Inventories carried at market	-	26,834	26,834
Unrealized gains on derivatives	-	12,045	12,045
Other assets	115	-	115
Total assets measured at fair value	$ 312,475	$ 38,879	$ 351,354
Liabilities:			
Accounts payable [(1)]	$ -	$ 37,401	$ 37,401
Unrealized losses on derivatives	-	12,884	12,884
Other liabilities	-	92	92
Total liabilities measured at fair value	$ -	$ 50,377	$ 50,377

(1) Accounts payable is generally stated at historical amounts with the exception of $10.0 million and $37.4 million at June 30, 2018 and December 31, 2017, 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 company believes the fair value of its debt approximated book value, which was $1.3 billion at June 30, 2018 and $1.4 billion at December 31, 2017. The company estimated the fair value of its outstanding debt using Level 2 inputs. The company believes the fair value of its accounts receivable approximated book value, which was $137.1 million and $151.1 million at June 30, 2018 and December 31, 2017, 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 issued 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 and distillers grains, and recovery of 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 cattle feeding, vinegar production and food-grade corn oil operations 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 June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Revenues:				
Ethanol production:				
Revenues from external customers	$ 589,256	$ 617,297	$ 1,153,019	$ 1,237,176
Intersegment revenues	4,219	1,549	6,172	3,045
Total segment revenues	593,475	618,846	1,159,191	1,240,221
Agribusiness and energy services:				
Revenues from external customers	170,074	150,755	371,861	319,066
Intersegment revenues	14,128	9,781	25,557	19,273
Total segment revenues	184,202	160,536	397,418	338,339
Food and ingredients:				
Revenues from external customers	225,887	116,660	503,996	214,682
Intersegment revenues	38	37	80	75
Total segment revenues	225,925	116,697	504,076	214,757
Partnership:				
Revenues from external customers	1,620	1,551	3,248	3,023
Intersegment revenues	24,220	23,514	48,477	49,271
Total segment revenues	25,840	25,065	51,725	52,294
Revenues including intersegment activity	1,029,442	921,144	2,112,410	1,845,611
Intersegment eliminations	(42,605)	(34,881)	(80,286)	(71,664)
Revenues as reported	$ 986,837	$ 886,263	$ 2,032,124	$ 1,773,947

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Cost of goods sold:				
Ethanol production	$ 581,613	$ 612,646	$ 1,146,172	$ 1,211,784
Agribusiness and energy services	165,174	152,110	366,886	318,504
Food and ingredients	206,440	100,009	466,205	183,044
Partnership	-	-	-	-
Intersegment eliminations	(42,602)	(34,746)	(80,303)	(71,417)
	$ 910,625	$ 830,019	$ 1,898,960	$ 1,641,915

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Operating income (loss):				
Ethanol production	$ (17,214)	$ (22,459)	$ (44,743)	$ (29,057)
Agribusiness and energy services	12,166	3,083	19,230	9,452
Food and ingredients	12,981	10,714	25,566	20,340
Partnership	16,129	14,798	31,489	31,417
Intersegment eliminations	144	(80)	212	(155)
Corporate activities	(12,441)	(9,842)	(23,914)	(18,391)
	$ 11,765	$ (3,786)	$ 7,840	$ 13,606

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
EBITDA:				
Ethanol production	$ 3,362	$ (873)	$ (3,733)	$ 12,951
Agribusiness and energy services	12,796	3,747	20,498	10,760
Food and ingredients	19,044	13,955	35,041	26,469
Partnership	17,138	16,066	33,761	33,960
Intersegment eliminations	144	(80)	212	(155)
Corporate activities	(10,642)	(8,742)	(20,817)	(16,063)
	$ 41,842	$ 24,073	$ 64,962	$ 67,922

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Depreciation and amortization:				
Ethanol production	$ 20,559	$ 20,142	$ 40,995	$ 40,484
Agribusiness and energy services	618	659	1,248	1,319
Food and ingredients	3,444	3,240	6,848	6,120
Partnership	1,105	1,247	2,286	2,501
Corporate activities	1,097	900	1,920	1,847
	$ 26,823	$ 26,188	$ 53,297	$ 52,271

The following table reconciles net income (loss) to EBITDA (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Net income (loss)	$ 3,751	$ (11,796)	$ (15,704)	$ (10,145)
Interest expense	22,021	19,430	44,149	37,926
Income tax benefit	(10,753)	(9,749)	(16,780)	(12,130)
Depreciation and amortization	26,823	26,188	53,297	52,271
EBITDA	$ 41,842	$ 24,073	$ 64,962	$ 67,922

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

		June 30, 2018		December 31, 2017
Total assets [1]:				
Ethanol production	$	1,090,323	$	1,144,459
Agribusiness and energy services		438,139		554,981
Food and ingredients		704,624		725,232
Partnership		73,255		74,935
Corporate assets		290,902		295,217
Intersegment eliminations		(11,470)		(10,174)
	$	2,585,773	$	2,784,650

(1) Asset balances by segment exclude intercompany receivable 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.

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

		June 30, 2018		December 31, 2017
Finished goods	$	143,665	$	146,269
Commodities held for sale		42,639		65,693
Raw materials		104,119		144,520
Work-in-process		298,738		320,664
Supplies and parts		36,141		34,732
	$	625,302	$	711,878

7. GOODWILL AND INTANGIBLE ASSETS

Goodwill

The company did not have any changes in the carrying amount of goodwill, which was $182.9 million at June 30, 2018, and December 31, 2017. Goodwill of $30.3 million, $142.0 million and $10.6 million are attributable to the ethanol production segment, food and ingredients segment and the partnership segment, respectively.

Intangible Assets

As of June 30, 2018, the company's customer relationship intangible asset recognized in connection with the Fleischmann Vinegar's acquisition is $70.7 million, net of $9.3 million of accumulated amortization, and has a remaining 13.3-year weighted-average amortization period. As of June 30, 2018, the company also has an indefinite-lived trade name intangible asset of $10.5 million. The company recognized $1.4 million and $2.7 million of amortization expense associated with the amortizing customer relationship intangible asset during the three and six months ended June 30, 2018, respectively, and $1.4 million and $2.8 million during the three and six months ended June 30, 2017, respectively, and expects estimated amortization expense for the next five years of $5.3 million per annum. The company's intangible assets are recorded within other assets on the consolidated balance sheets.

8. DERIVATIVE FINANCIAL INSTRUMENTS

At June 30, 2018, the company's consolidated balance sheet reflected unrealized losses of $4.2 million, net of tax, in accumulated other comprehensive income. The company expects these losses will be reclassified to operating income over the next 12 months as a result of hedged transactions that are forecasted to occur. The amount realized in operating income 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	
	June 30, 2018	December 31, 2017	June 30, 2018	December 31, 2017
Derivative financial instruments [1]	$ 18,969	$ 12,045	$ -	$ 12,884
Accrued and other liabilities	-	-	22,868	-
Other liabilities	-	-	84	92
Total	$ 18,969	$ 12,045	$ 22,952	$ 12,976

(1) At June 30, 2018, derivative financial instruments, as reflected on the balance sheet, include net unrealized gains on exchange traded futures and options contracts of $11.7 million, which included $1.1 million of net unrealized gains on derivative financial instruments designated as cash flow hedging instruments. At December 31, 2017, derivative financial instruments, as reflected on the balance sheet, includes net unrealized gains on exchange traded futures and options contracts of $8.5 million, which included $0.3 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 or (Loss) Reclassified from Accumulated Other Comprehensive Income into Income	Amount of Gain or (Loss) Reclassified from Accumulated Other Comprehensive Income into Income			
	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Revenues	$ (313)	$ 2,825	$ 1,448	$ 6,977
Cost of goods sold	1,079	(648)	101	182
Net gain recognized in earnings before tax	$ 766	$ 2,177	$ 1,549	$ 7,159

Gain or (Loss) Recognized in Other Comprehensive Income on Derivatives	Amount of Gain or (Loss) Recognized in Other Comprehensive Income on Derivatives			
	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Commodity contracts	$ (5,422)	$ (5,444)	$ 16,844	$ (2,834)

Derivatives Not Designated as Hedging Instruments	Location of Gain or (Loss) Recognized in Income on Derivatives	Amount of Gain or (Loss) Recognized in Income on Derivatives			
		Three Months Ended June 30,		Six Months Ended June 30,	
		2018	2017	2018	2017
Commodity contracts	Revenues	$ 7,027	$ (5,215)	$ 7,963	$ (10,263)
Commodity contracts	Costs of goods sold	7,121	3,284	123	15,220
		$ 14,148	$ (1,931)	$ 8,086	$ 4,957

As of June 30, 2018, 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	Carrying Amount of the Hedged Assets	Cumulative Amount of Fair Value Hedging Adjustment Included in the Carrying Amount of the Hedged Assets
Inventories	$ 46,561	$ 3,714

As of December 31, 2017, no amounts were recorded on the consolidated balance sheets related to cumulative basis adjustments for the fair value hedged items.

Effect of Cash Flow and Fair Value Hedge Accounting on the Statement of Financial Performance

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 June 30,			
	2018		2017	
	Revenue	Cost of Goods Sold	Revenue	Cost of Goods Sold
Gain (loss) on cash flow hedging relationships:				
Commodity contracts:				
Amount of gain (loss) reclassified from accumulated other comprehensive income into income	$ (313)	$ 1,079	$ 2,825	$ (648)
Gain (loss) on fair value hedging relationships:				
Commodity contracts:				
Hedged item	-	1,103	(31)	(2,526)
Derivatives designated as hedging instruments	-	(446)	(578)	2,406
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	$ (313)	$ 1,736	$ 2,216	$ (768)

	Location and Amount of Gain or (Loss) Recognized in Income on Cash Flow and Fair Value Hedging Relationships for the Six Months Ended June 30,			
	2018		2017	
	Revenue	Cost of Goods Sold	Revenue	Cost of Goods Sold
Gain on cash flow hedging relationships:				
Commodity contracts:				
Amount of gain reclassified from accumulated other comprehensive income into income	$ 1,448	$ 101	$ 6,977	$ 182
Gain (loss) on fair value hedging relationships:				
Commodity contracts:				
Hedged item	-	10,496	1,390	(4,454)
Derivatives designated as hedging instruments	-	(8,878)	(1,673)	5,445
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	$ 1,448	$ 1,719	$ 6,694	$ 1,173

There were no gains or losses from discontinuing cash flow or fair value hedge treatment during the three and six months ended June 30, 2018 and 2017.

The open commodity derivative positions as of June 30, 2018, are as follows (in thousands):

	June 30, 2018				
	Exchange Traded	Non-Exchange Traded			
Derivative Instruments	Net Long & (Short) [(1)]	Long [(2)]	(Short) [(2)]	Unit of Measure	Commodity
Futures	(52,345)			Bushels	Corn, Soybeans and Wheat
Futures	500 [(3)]			Bushels	Corn
Futures	(4,750)[(4)]			Bushels	Corn
Futures	(36,313)			Gallons	Ethanol
Futures	(18,270)[(3)]			Gallons	Ethanol
Futures	10,050			MmBTU	Natural Gas
Futures	(9,765)[(4)]			MmBTU	Natural Gas
Futures	(18,390)			Pounds	Livestock
Futures	(292,280)[(3)]			Pounds	Cattle
Futures	(11)			Barrels	Crude Oil
Futures	(43)[(4)]			Barrels	Crude Oil
Futures	2,814 [(3)]			Gallons	Natural Gasoline
Options	5,304			Bushels	Corn, Soybeans and Wheat
Options	9,467			Gallons	Ethanol
Options	(1,898)			MmBTU	Natural Gas
Options	(3,732)			Pounds	Livestock
Options	67			Barrels	Crude Oil
Forwards		50,708	(555)	Bushels	Corn and Soybeans
Forwards		32,986	(289,259)	Gallons	Ethanol
Forwards		368	(638)	Tons	DDG
Forwards		23,463	(122,826)	Pounds	Corn Oil
Forwards		17,086	(1,931)	MmBTU	Natural Gas
Forwards		44	(44)	Barrels	Crude Oil

(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 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 $4.1 million and $10.8 million for the three and six months ended June 30, 2018, respectively, and net gains of $6.8 million and $15.1 million for the three and six months ended June 30, 2017, respectively.

9. DEBT

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

	June 30, 2018	December 31, 2017
Corporate:		
$500.0 million term loan	$ 496,250	$ 498,750
$120.0 million convertible notes due 2018	62,953	61,442
$170.0 million convertible notes due 2022	139,654	136,739
Green Plains Partners:		
$235.0 million revolving credit facility	128,900	126,900
Other	27,129	27,744
Total face value of long-term debt	854,886	851,575
Unamortized debt issuance costs	(17,023)	(16,256)
Less: current portion of long-term debt	(69,752)	(67,923)
Total long-term debt	$ 768,111	$ 767,396

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

	June 30, 2018	December 31, 2017
Green Plains Cattle:		
$425.0 million revolver	$ 243,147	$ 270,860
Green Plains Grain:		
$125.0 million revolver	71,800	75,000
Green Plains Trade:		
$300.0 million revolver	131,170	180,320
Green Plains Commodity Management:		
$20.0 million hedge line	11,355	-
	$ 457,472	$ 526,180

Corporate Activities

On August 29, 2017, the company entered into a $500.0 million term loan agreement, which matures on August 29, 2023, to refinance approximately $405.0 million of total debt outstanding issued by Green Plains Processing and Fleischmann's Vinegar, pay associated fees and expenses and for general corporate purposes. The term loan is guaranteed by the company and substantially all of its subsidiaries, except for Green Plains Partners and certain other entities, and secured by substantially all of the assets of the company, including 17 ethanol production facilities, vinegar production facilities and a second priority lien on the assets secured under the revolving credit facilities at Green Plains Trade, Green Plains Cattle and Green Plains Grain.

The credit agreement contains certain customary representations and warranties, affirmative covenants, negative covenants, financial covenants and events of default. The negative covenants include restrictions on the ability to incur additional indebtedness, acquire and sell assets, create liens, make investments, pay distributions and enter into transactions with affiliates. At the end of each fiscal quarter, the covenants of the credit agreement require the company to maintain a maximum term debt to total term capitalization of 55% and a minimum interest coverage ratio of 1.25 to 1.00, as defined in the credit agreement. Beginning in 2018, the credit facility also has a provision requiring the company to make special annual payments of 50% or 75% of its available free cash flow, subject to certain limitations. Voluntary term loan prepayments are subject to prepayment fees of 1.0% if prepaid before the eighteen-month anniversary of the credit agreement. Scheduled principal payments are $1.25 million each quarter until maturity. The term loan bears interest at a floating rate of a base rate plus a margin of 4.50% or LIBOR plus a margin of 5.50%.

In September 2013, the company issued $120.0 million of 3.25% convertible senior notes due 2018, or the 3.25% notes. The 3.25% notes are senior, unsecured obligations of the company, with interest payable on April 1 and October 1 of each year. The company may settle the 3.25% notes in cash, common stock or a combination of cash and common stock. Prior to April 1, 2018, the 3.25% notes were not convertible unless certain conditions are satisfied. The conversion rate is subject to adjustment upon the occurrence of certain events, including when the quarterly cash dividend exceeds $0.04 per share. The conversion rate was recently adjusted as of June 30, 2018 to 50.6481 shares of common stock per $1,000 of principal, which is equal to a conversion price of approximately $19.74 per share. For all conversions of notes which occur on or after April 1, 2018, the company has elected to convert for whole shares of common stock with any fractional share being settled with cash in lieu.

During fiscal year 2017, approximately $56.3 million in aggregate principal of the 3.25% notes were exchanged for cash and 2,783,725 shares of the company's common stock. During the three months ended June 30, 2018, an additional 50 shares of the company's common stock were exchanged for approximately $1 thousand in aggregate principal amount of the 3.25% notes. Following the closing of these agreements, $63.7 million aggregate principal of the 3.25% notes remain outstanding.

The company may redeem all of the 3.25% notes at any time on or after October 1, 2016, 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 3.25% notes have the option to require the company to repurchase the 3.25% 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 3.25% notes being declared due and payable.

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 conversion rate is subject to adjustment upon the occurrence of certain events, including when the quarterly cash dividend exceeds $0.12 per share and upon redemption of the 4.125% notes. 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 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

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

Agribusiness and Energy Services Segment

Green Plains Grain has a $125.0 million senior secured asset-based revolving credit facility, to finance 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. The credit facility matures on July 26, 2019. 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 $250.0 million. The total unused portion of the $125.0 million revolving credit facility is also subject to a commitment fee ranging from 0.375% to 0.50% per annum depending on utilization.

Lenders receive a first priority lien on certain cash, inventory, accounts receivable and other assets owned by Green Plains Grain and a second priority lien on substantially all of the assets of the company, including 17 ethanol production facilities and vinegar production facilities as security on the credit facility. The terms impose affirmative and negative covenants for Green Plains Grain, including maintaining minimum working capital of $22.0 million and tangible net worth of $27.0 million. 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, the credit facility requires the company to maintain a minimum fixed charge coverage ratio of 1.25 to 1.00 and a maximum annual leverage ratio of

6.00 to 1.00 at the end of each quarter. The fixed charge coverage ratio and long-term capitalization ratio apply only if the company has long-term indebtedness on the date of calculation. As of June 30, 2018, Green Plains Grain had no long-term indebtedness. The credit facility also contains restrictions on distributions related to capital stock, with exceptions for distributions up to 50% of net profit before tax, subject to certain conditions.

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 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 Commodity Management has an uncommitted $20.0 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%.

Food and Ingredients Segment

Green Plains Cattle has a $425.0 million senior secured asset-based revolving credit facility, which matures on April 30, 2020, to finance working capital for the cattle feeding operations up to the maximum commitment based on eligible collateral equal to the sum of percentages of eligible receivables, inventories and other current assets, less miscellaneous adjustments. Advances, as amended, are subject to variable interest rates equal to LIBOR plus 2.00% to 3.00%, or the base rate plus 1.00% to 2.00%, depending upon the preceding three months' excess borrowing availability. The amended credit facility also includes an accordion feature that enables the credit facility to be increased by up to $75.0 million with agent approval. The unused portion of the credit facility is also subject to a commitment fee of 0.20% to 0.30% per annum, depending on the preceding three months' excess borrowing availability.

Lenders receive a first priority lien on certain cash, inventory, accounts receivable, property and equipment and other assets owned by Green Plains Cattle and a second priority lien on substantially all of the assets of the company, including 17 ethanol production facilities and vinegar production facilities as security on the credit facility. The amended terms impose affirmative and negative covenants, including maintaining a minimum working capital of 15% of the commitment amount, minimum tangible net worth of 20% of the commitment amount, plus 50% of net profit from the previous year, and a maximum total debt to tangible net worth ratio of 3.50 to 1.00. Capital expenditures are limited to $10.0 million per year under the credit facility, plus $10.0 million per year if funded by a contribution from parent, plus any unused amounts from the previous year.

Partnership Segment

Green Plains Partners, through a wholly owned subsidiary, has a $235.0 million revolving credit facility, as amended, which matures on July 1, 2020, to fund working capital, acquisitions, distributions, capital expenditures and other general partnership purposes. On February 20, 2018, the partnership accessed an additional $40.0 million to increase the revolving credit facility from $195.0 million to $235.0 million. The credit facility can be increased by an additional $20.0 million without the consent of the lenders. 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 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 3.50 to 1.00, and a minimum consolidated interest coverage ratio of 2.75 to 1.00, each of which is calculated on a pro forma basis with respect to acquisitions and divestitures occurring during the applicable period.

Covenant Compliance

The company was in compliance with its debt covenants as of June 30, 2018.

Restricted Net Assets

At June 30, 2018, there were approximately $166.0 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.

Stock Options

The activity related to the exercisable stock options for the six months ended June 30, 2018, is as follows:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2017	143,750	$ 12.44	1.8	$ 635
Granted	-	-	-	-
Exercised	(15,000)	10.00	-	120
Forfeited	-	-	-	-
Expired	-	-	-	-
Outstanding at June 30, 2018	128,750	$ 12.72	1.5	$ 718
Exercisable at June 30, 2018 (1)	128,750	$ 12.72	1.5	$ 718

(1) Represents in-the-money options.

Option awards allow employees to exercise options through cash payment for the shares of common stock or simultaneous broker-assisted transactions in which the employee authorizes the exercise and immediate sale of the shares in the open market. The company uses newly issued shares of common stock to satisfy its stock-based payment obligations.

Restricted Stock

The non-vested stock award and deferred stock unit activity for the six months ended June 30, 2018, 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, 2017	1,068,947	$ 20.41	
Granted	660,509	18.20	
Forfeited	(7,741)	20.17	
Vested	(501,621)	20.62	
Non-Vested at June 30, 2018	1,220,094	$ 19.12	2.1

Performance Shares

On March 19, 2018, the board of directors granted 153,030 performance shares to be awarded in the form of common stock to certain participants of the plan. 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 March 19, 2021, 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 increase or decrease 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 this award is 229,545 performance shares or 150% of the 153,030 performance shares granted on March 19, 2018. 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 during the six months ended June 30, 2018 are illustrated in the following table:

	Six Months Ended June 30, 2018
Risk-free interest rate	2.44 %
Dividend yield	2.64 %
Expected volatility	45.11 %

The Monte Carlo valuation also estimated the number of performance shares that would be awarded which is reflected in the fair value on the grant date. The Monte Carlo valuation assumed 97.39% of the performance shares granted on March 19, 2018 would be awarded on March 19, 2021 based upon the estimated company’s total shareholder return relative to peer performance. The company’s closing stock price was $18.15 on the date of the grant.

At June 30, 2018 unrecognized stock compensation expense of $2.5 million, excluding any potential forfeitures, will be recognized over the vesting period of these performance share awards on a straight-line basis.

Green Plains Partners

Green Plains Partners adopted the LTIP, an incentive plan intended to promote the interests of the partnership, its general partner and affiliates by providing incentive compensation based on units to employees, consultants and directors to encourage superior performance. The incentive plan reserves 2,500,000 common units for issuance in the form of options, restricted units, phantom units, distributable equivalent rights, substitute awards, unit appreciation rights, unit awards, profits interest units or other unit-based awards. The partnership measures unit-based compensation related to equity awards in its consolidated financial statements over the requisite service period on a straight-line basis.

The non-vested unit-based awards activity for the six months ended June 30, 2018, 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, 2017	11,549	$ 19.06	
Granted	-	-	
Forfeited	-	-	
Vested	(11,549)	19.06	
Non-Vested at June 30, 2018	-	$ -	0.0

Compensation costs for stock-based and unit-based payment plans during the three and six months ended June 30, 2018, were approximately $3.0 million and $5.4 million, respectively, and $3.0 million and $5.5 million during the three and six months ended June 30, 2017, respectively. At June 30, 2018, there was $17.0 million of unrecognized compensation costs from stock-based and unit-based compensation related to non-vested awards, excluding performance shares noted above. This compensation is expected to be recognized over a weighted-average period of approximately 2.1 years. The potential tax benefit related to stock-based payment is approximately 24.4% 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 basic and diluted EPS are calculated as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Basic EPS:				
Net loss attributable to Green Plains	$ (994)	$ (16,366)	$ (25,111)	$ (19,963)
Weighted average shares outstanding - basic	40,194	40,220	40,168	39,326
EPS - basic	$ (0.02)	$ (0.41)	$ (0.63)	$ (0.51)
Diluted EPS:				
Net loss attributable to Green Plains	$ (994)	$ (16,366)	$ (25,111)	$ (19,963)
Weighted average shares outstanding - diluted	40,194	40,220	40,168	39,326
EPS - diluted	$ (0.02)	$ (0.41)	$ (0.63)	$ (0.51)

Excluded from the computation of diluted EPS were 10.2 million and 10.1 million shares related to the effect of the convertible debt and stock-based compensation awards for the three and six months ended June 30, 2018, respectively, and 10.7 million shares and 11.3 million shares for the three and six months ended June 30, 2017, as the inclusion of these shares would have been antidilutive.

12. STOCKHOLDERS' EQUITY

Components of stockholders' equity are as follows (in thousands):

	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Retained Earnings	Accum. Other Comp. Income	Treasury Stock Shares	Treasury Stock Amount	Total Green Plains Stockholders' Equity	Non-Controlling Interests	Total Stockholders' Equity
Balance, December 31, 2017	46,410	$ 46	$ 685,019	$ 325,411	$ (13,110)	5,326	$ (55,184)	$ 942,182	$ 116,954	$ 1,059,136
Reclassification of certain tax effects from other comprehensive loss (Note 1)	-	-	-	2,787	(2,787)	-	-	-	-	-
Balance, January 1, 2018	46,410	46	685,019	328,198	(15,897)	5,326	(55,184)	942,182	116,954	1,059,136
Net income (loss)	-	-	-	(25,111)	-	-	-	(25,111)	9,407	(15,704)
Cash dividends and distributions declared	-	-	-	(9,682)	-	-	-	(9,682)	(10,898)	(20,580)
Other comprehensive income before reclassification	-	-	-	-	12,873	-	-	12,873	-	12,873
Amounts reclassified from accumulated other comprehensive income	-	-	-	-	(1,184)	-	-	(1,184)	-	(1,184)
Other comprehensive income, net of tax	-	-	-	-	11,689	-	-	11,689	-	11,689
Exchange of 3.25% convertible notes due 2018	-	-	-	-	-	-	1	1	-	1
Stock-based compensation	336	1	2,300	-	-	-	-	2,301	120	2,421
Stock options exercised	15	-	150	-	-	-	-	150	-	150
Balance, June 30, 2018	46,761	$ 47	$ 687,469	$ 293,405	$ (4,208)	5,326	$ (55,183)	$ 921,530	$ 115,583	$ 1,037,113

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

	Three Months Ended June 30, 2018	Three Months Ended June 30, 2017	Six Months Ended June 30, 2018	Six Months Ended June 30, 2017	Statements of Operations Classification
Gains on cash flow hedges:					
Commodity derivatives	$ (313)	$ 2,825	$ 1,448	$ 6,977	Revenues
Commodity derivatives	1,079	(648)	101	182	Cost of goods sold
Total	766	2,177	1,549	7,159	Loss before income taxes
Income tax benefit	185	824	365	2,672	Income tax benefit
Amounts reclassified from accumulated other comprehensive income	$ 581	$ 1,353	$ 1,184	$ 4,487	

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 Tax Cuts and Jobs Act was enacted on December 22, 2017 and is effective January 1, 2018. The Act reduced the federal tax rate to 21%. Due to the significance of the legislation, the SEC issued Staff Accounting Bulletin 118 (SAB 118), which provides a measurement period to complete the accounting for certain elements of the tax reform. The company is still analyzing certain other provisions of the legislation and its impact to future income taxes, including interest expense limitation to 30% of adjusted taxable income, use of AMT credit carryforwards, limitation of net operating loss carryforwards to 80% of taxable income, and deducibility of officer compensation. Any subsequent adjustments will be recorded as tax expense during the period in which the analysis is complete.

The company recorded income tax benefit of $10.8 million and $16.8 million for the three and six months ended June 30, 2018, respectively, compared with $9.7 million and $12.1 million for the same periods in 2017. The increase in income tax benefit was due primarily to the company's recognition of tax benefits of $8.3 million during the three months ended June 30, 2018 for federal and state R&D Credits relating to current and prior periods.

The amount of unrecognized tax benefits for uncertain tax positions was $47.9 million as of June 30, 2018, and $26.0 million as of December 31, 2017. Recognition of these benefits would have a favorable impact on the company's effective tax rate.

The 2018 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

Operating Leases

The company leases certain facilities, equipment and parcels of land under agreements that expire at various dates. For accounting purposes, rent expense is based on a straight-line amortization of the total payments required over the lease. The company incurred lease expenses of $10.0 million and $20.7 million during the three and six months ended June 30, 2018, respectively, and $11.9 million and $22.2 million during the three and six months ended June 30, 2017, respectively.

Aggregate minimum lease payments under these agreements for the remainder of 2018 and in future years are as follows (in thousands):

Year Ending December 31,		Amount
2018	$	17,128
2019		24,298
2020		17,939
2021		9,985
2022		6,240
Thereafter		24,502
Total	$	100,092

Commodities

As of June 30, 2018, the company had contracted future purchases of grain, corn oil, natural gas, crude oil, ethanol, distillers grains and cattle, valued at approximately $481.3 million.

Legal

In November 2013, the company acquired two ethanol plants located in Fairmont, Minnesota and Wood River, Nebraska. There is ongoing litigation related to the consideration for this acquisition. On August 19, 2016, the Delaware Superior Court granted Green Plains' motion for summary judgment in part and held that the seller's attempt to disclaim liability for certain shortfall amounts through the use of a disclaimer provision was ineffective. Based on the court order, the company determined that previously accrued contingent liabilities of approximately $6.3 million no longer represented probable losses. These accruals were reversed as a reduction of cost of goods sold during the year ended December 31, 2016, because the adjustment relates to a reduction in the cost of inventory purchased in the acquisitions. Per the court's direction, the company and the seller retained an independent accounting firm to determine if a shortfall exists and the precise shortfall due to Green Plains. The accounting firm has concluded that a shortfall does exist consistent with the company's calculations, and the matter is now back in the hands of the Court to review and enter its order. The company believes the remaining amount due to Green Plains is approximately $5.5 million; however, the seller has the right to dispute the details of the calculation and appeal the underlying Superior Court order. Accordingly, the total amount Green Plains may receive is yet to be determined. The remaining amount due to the company represents a gain contingency which will not be recorded until all contingencies are resolved.

In addition to the above-described proceeding, the company is currently involved in litigation that has arisen in 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

Commercial Contracts

In March 2014, a subsidiary of the company entered into $1.4 million of new equipment financing agreements with Amur Equipment Finance. Gordon Glade, a member of the company's board of directors, is a shareholder of Amur Equipment Finance. Balances of $0.5 million and $0.6 million related to these financing arrangements were included in debt at June 30, 2018, and December 31, 2017, respectively. Payments, including principal and interest, totaled $69 thousand and $138 thousand during each of the three and six months ended June 30, 2018 and 2017, respectively. The weighted average interest rate for the financing agreements with Amur Equipment Finance was 6.8%.

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 $30 thousand and $87 thousand during the three and six months ended June 30, 2018, respectively, and $41 thousand and $102 thousand during the three and six months ended June 30, 2017, respectively. The company had no outstanding payables related to these agreements as of June 30, 2018 and $2 thousand in outstanding payables related to these agreements as of December 31, 2017.

16. SUBSEQUENT EVENTS

On July 27, 2018, the company entered into an asset purchase agreement to acquire two feeding operations from Bartlett Cattle Company, L.P. for $16.2 million, plus working capital of approximately $108.9 million. The transaction includes two feed yards located in Sublette, Kansas and Tulia, Texas and will add combined feedlot capacity of 97,000 head of cattle to the company's operations. The transaction will be financed using cash on hand and proceeds from the Green Plains Cattle senior secured asset-based revolving credit facility. The transaction closed on August 1, 2018 following receipt of regulatory approval.

On July 31, 2018, the company entered into an amendment of its Green Plains Cattle senior secured asset-based revolving credit facility with a group of lenders led by Bank of the West and ING Capital LLC, increasing the maximum commitment from $425.0 million to $500.0 million. The amendment was completed to fund the additional working capital requirements related to the acquisition of the Sublette, Kansas and Tulia, Texas cattle feeding operations. The amended credit facility also includes an accordion feature that enables the credit facility to be increased by up to $100.0 million with agent approval. All other terms and conditions of the credit facility remain the same.

On August 1, 2018, DKGP Energy Terminals LLC, the 50/50 joint venture between Delek Logistics Partners LP and Green Plains Partners LP, notified AMID Merger LP of its termination of the membership interest purchase agreement (MIPA), dated as of February 16, 2018, to acquire all of the membership interests of AMID Refined Products LLC. The MIPA was terminated due to regulatory obstacles. The termination was made pursuant to Section 8.1 of the MIPA, without any liability, obligation or penalty incurred by either party.

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 and other quarterly reports filed with the SEC after December 31, 2017, together with our annual report on Form 10-K for the year ended December 31, 2017.

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, 2017, in Part II – Risk Factors of this report, or incorporated by reference. Specifically, we may experience significant fluctuations in future operating results due to a number of economic conditions, including: 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, risks related to acquisitions and achieving anticipated results; risks associated with merchant trading, cattle feeding operations, vinegar production; risks related to our portfolio optimization strategy and other risk 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, nor do we 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 related to ethanol production, grain handling and storage, cattle feedlots, food ingredients, and commodity marketing and logistics services. We are focused on generating stable operating margins through our diversified business segments and risk management strategy. Green Plains Partners LP is our primary downstream logistics provider, storing and delivering the ethanol we produce. As of June 30, 2018, we own a 62.5% limited partner interest, a 2.0% general partner interest and all of the partnership's incentive distribution rights. The public owns the remaining 35.5% limited partner interest. The partnership is consolidated in our financial statements.

Recent Developments

During the fourth quarter of 2017, commercial development of the JGP Energy Partners intermodal import and export fuels terminal in Beaumont, Texas was completed, with storage capacity of 550 thousand barrels to support various export and domestic grades of ethanol. On December 4, 2017, the first ethanol shipment departed from the terminal. Green Plains formed the 50/50 joint venture to construct the terminal in June 2016 with Jefferson Ethanol Holdings LLC, a subsidiary of Fortress Transportation and Infrastructure Investors LLC. Per the omnibus agreement between Green Plains and the partnership, Green Plains is required to offer its interest in the joint venture to the partnership no later than six months after the completion of construction; however, the partnership and Green Plains have agreed to extend the offer period until no later than October 15, 2018.

On February 16, 2018, the partnership and Delek Logistics Partners LP formed DKGP Energy Terminals LLC, a 50/50 joint venture, to acquire and manage light products terminal assets in Texas and Arkansas. In conjunction with the formation of the joint venture, DKGP executed a membership interest purchase agreement with AMID Merger LP, to acquire all of the membership interests of AMID Refined Products LLC ("AMID") for approximately $138.5 million. Due to regulatory obstacles, on August 1, 2018, DKGP Energy Terminals LLC notified AMID Merger LP of its termination of the membership interest purchase agreement.

On July 27, 2018, the company entered into an asset purchase agreement to acquire two feeding operations from Bartlett Cattle Company, L.P. for $16.2 million, plus working capital of approximately $108.9 million. The transaction includes two feed yards located in Sublette, Kansas and Tulia, Texas and will add combined feedlot capacity of 97,000 head of cattle to the company's operations. The transaction will be financed using cash on hand and proceeds from the Green Plains Cattle senior secured asset-based revolving credit facility. The transaction closed on August 1, 2018 following receipt of regulatory approval.

On July 31, 2018, the company entered into an amendment of its Green Plains Cattle senior secured asset-based revolving credit facility with a group of lenders led by Bank of the West and ING Capital LLC, increasing the maximum commitment from $425.0 million to $500.0 million. The amendment was completed to fund the additional working capital requirements related to the acquisition of the Sublette, Kansas and Tulia, Texas cattle feeding operations. The amended credit facility also includes an accordion feature that enables the credit facility to be increased by up to $100.0 million with agent approval.

Results of Operations

During the second quarter of 2018, we continued to run several of our ethanol plants below capacity due to scheduled downtime and continued oversupply of domestic ethanol. Our average utilization rate was approximately 80.0% of capacity, resulting in ethanol production of 296.3 mmg for the second quarter of 2018, compared with 275.5 mmg, or 74.7% of capacity, for the same quarter last year.

U.S. Ethanol Supply and Demand

According to the EIA, domestic ethanol production averaged 1.04 million barrels per day during the second quarter of 2018, maintaining the same rate of production as the previous quarter but 3.8% higher than the same quarter of last year. Year-to-date, production volumes are up 1.8% in 2018 compared with the same period in 2017. Refiner and blender input volume decreased slightly to 930 thousand barrels per day for the second quarter of 2018 compared with 934 thousand barrels per day for the same quarter last year despite a 2.0% increase in consumer gasoline demand due to seasonal demand and growing numbers of retail stations offering higher blends. As of June 30, 2018, there were approximately 1,431 retail stations selling E15 in 29 states, up from 1,210 at the beginning of the year, according to Growth Energy. Ethanol futures traded at an average discount of $0.66 to RBOB during the second quarter of 2018 related to weaker ethanol demand. U.S. domestic ethanol ending stocks increased slightly by approximately 400 thousand barrels to 22.0 million barrels on June 30, 2018, year over year.

Global Ethanol Supply and Demand

According to the USDA Foreign Agriculture Service, year-to-date domestic ethanol exports through May 31, 2018, were 776.2 mmg, up 31%, from 594.0 mmg for the comparable period in 2017. Brazil remained the largest export destination for U.S. ethanol, which accounted for 40% 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. Canada, China, India and South Korea accounted for 16%, 7%, 6% and 5%, respectively, of U.S. ethanol exports.

U.S. corn-based ethanol continues to have a price advantage, including the current tariff in Brazil, over Brazilian ethanol due to the price of corn relative to sugar cane as a feedstock. On April 1, 2018, China announced it would add a 15% tariff to the existing 30% tariff it had earlier imposed on ethanol imports from the United States and Brazil. 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 12 cents per pound during the second quarter of 2018, compared with an average of 16 cents per pound for 2017. We currently estimate that net ethanol exports will reach between 1.6 billion gallons and 1.8 billion gallons in 2018 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.

U.S. Protein Supply and Demand

During the second quarter of 2018, the market sentiment for cattle continued to be optimistic due to anticipated lower cost of feed, higher domestic beef consumption and increased export demand for beef. July corn futures were down 17% from May 2018 highs, according to the Chicago Mercantile Exchange. Domestic beef consumption per capita in 2018 is projected to increase 1.0 pound to 57.9 pounds per person compared with 2017. Export demand for beef is forecasted to increase approximately 7% in 2018 compared with 2017 according to the USDA.

Cow-calf operations continue to be profitable, which has supported a period of expansion. Since the fourth quarter of 2017, the lack of precipitation threatened to force the liquidation of breeding stock on many ranches throughout the south and southwestern United States. Timely rains throughout the second quarter of 2018 minimized herd liquidation, keeping the expansion intact for the time being. Year-to-date domestic cattle on feed increased 4.3% to 11.3 million head through June 30, 2018, compared to the same period last year.

Packer demand was driven by strong domestic and international beef demand. Total steer and heifer slaughter through the first half of 2018 increased 2.5% compared with the first half of 2017. Slaughter capacity constraints, primarily due to labor shortages, have limited the packer's ability to increase slaughter rates at the same pace as cattle on feed inventories, resulting in higher packer margins. Increased slaughter capacity will be crucial for cattle feeding margins from a demand perspective.

The U.S. looks poised to grow its global market share for animal protein while Australia continues to struggle with drought conditions and food safety scandals plague South America.

Year-to-date U.S. distillers grains exports through May 31, 2018, were 4.6 million metric tons, or less than a half of a percent lower than the same period last year, according to the USDA Foreign Agriculture Service. Shipments of distillers grains to Southeast Asia increased 95% year over year due to growing demand for protein, which helped keep export volumes in line with last year. Mexico, South Korea, Vietnam, Thailand, Turkey, Canada and Indonesia accounted for approximately 68% of total U.S. distillers export volumes.

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. Congress may also consider legislation that would impact the RFS. Bills have been introduced in the House and Senate, which would sunset the RFS entirely or the corn based ethanol portion of the mandate.

Federal mandates supporting the use of renewable fuels are a significant driver of ethanol demand in the U.S. Ethanol policies are influenced by environmental concerns, diversifying our fuel supply, and an interest in reducing the country's dependence on foreign oil. Consumer acceptance of flex-fuel vehicles and higher ethanol blends may be necessary before ethanol can achieve significant growth in U.S. market share. CAFE, which was first enacted by Congress in 1975 to reduce energy consumption by increasing the fuel economy of cars and light trucks, provides a 54% efficiency bonus to flexible-fuel vehicles running on E85. Another important factor is a waiver in the Clean Air Act, known as the One-Pound Waiver, which allows only E10 to be sold year-round, even though it exceeds the Reid vapor pressure limitation of nine pounds per square inch. The One-Pound Waiver does not apply to E15 or higher blends, even though it has similar physical properties to E10, so its sale is limited to flex-fuel vehicles only during the June 1 to September 15 summer driving season.

When RFS II was passed in 2007 and rulemaking finalized in October 2010, the required volume of conventional renewable fuel to be blended with gasoline was to increase each year until it reached 15.0 billion gallons in 2015. In November 2017, the EPA announced it would maintain the 15.0 billion gallon mandate for conventional ethanol in 2018. In June 2018, the EPA proposed to maintain 15.0 billion gallons for 2019, and plans to finalize the rule by November 30, 2018.

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 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. While conventional ethanol maintained 15 billion gallons, 2018 is the first year the total proposed RVOs are more than 20% below statutory volumes levels. Thus, the EPA Administrator directed his staff to initiate the required technical analysis to perform any future reset consistent with the reset rules. The reset will be triggered if the final 2019

RVOs continue to be more than 20% below the statutory levels as expected, and the EPA will be required to modify statutory volumes through 2022 within one year of the trigger event, based on the same factors used to set the RVOs post-2022.

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 RFS-mandated volumes. RINs are attached to renewable fuels by producers and detached when the renewable fuel is blended with transportation fuel or traded 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.

The EPA can, in consultation with the Department of Energy, waive the obligation for individual refineries that are suffering "disproportionate economic hardship" due to compliance with the RFS. To qualify, the refineries must be under 75,000 barrels per day and state their case for an exemption in an application to the EPA each year. The current administration has been granting these at a much higher rate than the previous one, waiving the obligation for 19 of 20 applicants for compliance year 2016, totaling 790 million gallons, and 29 of 33 for compliance year 2017, totaling 1.46 billion gallons. This effectively reduces the annual RVO by that amount, since the waived gallons are not reallocated to other obligated parties at this time. The resulting surplus of RINs in the market has brought values down significantly, from the mid $0.80 range early in the year to the low $0.20s. Since the RIN value helps to make higher blends of ethanol more cost effective, lower RIN values could negatively impact retailer and consumer adoption of E15 and higher blends.

On April 12, 2018, following a series of meetings involving President Trump, Senators, key federal agency leaders and the industry, President Trump indicated that the EPA would be moving forward to authorize year-round sales of E15 by rulemaking designed to address the One-Pound RVP Waiver that currently inhibits sales of E15 in certain markets during summer driving months. President Trump later planned to pair this move with a directive to allow ethanol gallons to retain RIN credits when they are exported, in an effort to keep RIN costs low for refiners. To date, nothing definitive has materialized from these efforts with respect to year-round sales of E15.

In November 2017, the EPA denied a petition to change the point of obligation under RFS II to the parties that own the gasoline before it is sold.

On July 28, 2017, the U.S. Federal District Court for the D.C. Circuit ruled in favor of the Americans for Clean Energy and its petitioners against the EPA related to its decision to lower the 2016 volume requirements. The Court concluded the EPA erred in how it interpreted the "inadequate domestic supply" waiver provision of RFS II, which authorizes the EPA to consider supply-side factors affecting the volume of renewable fuel available to refiners, blenders and importers to meet statutory volume requirements. The waiver provision does not allow the EPA to consider the volume of renewable fuel available to consumers or the demand-side constraints that affect the consumption of renewable fuel by consumers. As a result, the Court vacated the EPA's decision to reduce the total renewable fuel volume requirements for 2016 through its waiver authority, which the EPA is expected to address. We believe this decision to confine the EPA's waiver analysis to supply considerations benefits the industry overall and expect the primary impact will be on the RINs market.

Valero Energy and refining trade group American Fuel and Petrochemical Manufacturers (AFPM) have challenged the EPA's handling of the U.S. biofuel mandate in separate actions on January 26, 2018. AFPM is asking the D.C. U.S. Court of Appeals to review the EPA's November 2017 decision to reject proposed changes to the structure of the RFS, including moving the point of obligation from refiners and importers of fuel to fuel blenders. Valero filed two petitions with the same court, one seeking review of the annual RVO rule set by the EPA for 2018 and 2019, which dictates the volumes of renewable fuels to be blended in the coming years, and a second arguing against the EPA's December 2017 assertion that the agency has fulfilled its duty to periodically review the RFS as directed by statute.

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 Board 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 the year due to a 30% tariff imposed on U.S. and Brazil fuel ethanol, which took effect in January 2017. There is no assurance the recently issued joint plan will lead to increased imports of U.S. ethanol, and recent trade tensions have caused China to raise their tariff on ethanol to 45% and then to 70%. Our exports also face tariff rate quotas, countervailing duties, and other hurdles in Brazil, the European Union, India, Peru, and elsewhere, which limits our ability to compete in some markets.

In Mexico, CAMEX 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 ruling is valid for two years. In June 2017, the Energy Regulatory Commission of Mexico (CRE) approved the use of 10% ethanol blends, which was challenged by 14 lawsuits. Eight cases were dismissed. The six remaining 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. Five of these cases were initially denied and are going through the appeals process. 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 throughout Mexico except for its three largest metropolitan areas. U.S. ethanol exports to Mexico totaled 30 mmg in 2017.

The Tax Cuts and Jobs Act was enacted on December 22, 2017 and is effective January 1, 2018. We continue to analyze the Act's impact to current and future taxes. We are also following the guidance of SAB 118 which provides a measurement period to complete accounting for certain elements of the tax reform. On March 23, 2018, Congress rescinded an unintended consequence of the Act under section 199A, which provided certain tax benefits to producers selling grain to cooperative associations and enabled a potential marketplace advantage over other agribusiness companies.

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 and distillers grains, and recovery of 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 cattle feeding, vinegar production and food-grade corn oil operations and (4) partnership, which includes fuel storage and transportation services.

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, 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 June 30, 2018, we, together with our subsidiaries, own a 62.5% 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 35.5% 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 June 30, 2018	Three Months Ended June 30, 2017	% Variance	Six Months Ended June 30, 2018	Six Months Ended June 30, 2017	% Variance
Revenues:						
Ethanol production:						
Revenues from external customers	$ 589,256	$ 617,297	(4.5%)	$ 1,153,019	$ 1,237,176	(6.8%)
Intersegment revenues	4,219	1,549	172.4	6,172	3,045	102.7
Total segment revenues	593,475	618,846	(4.1)	1,159,191	1,240,221	(6.5)
Agribusiness and energy services:					-	
Revenues from external customers	170,074	150,755	12.8	371,861	319,066	16.5
Intersegment revenues	14,128	9,781	44.4	25,557	19,273	32.6
Total segment revenues	184,202	160,536	14.7	397,418	338,339	17.5
Food and ingredients:					-	
Revenues from external customers	225,887	116,660	93.6	503,996	214,682	134.8
Intersegment revenues	38	37	2.7	80	75	6.7
Total segment revenues	225,925	116,697	93.6	504,076	214,757	134.7
Partnership:					-	
Revenues from external customers	1,620	1,551	4.4	3,248	3,023	7.4
Intersegment revenues	24,220	23,514	3.0	48,477	49,271	(1.6)
Total segment revenues	25,840	25,065	3.1	51,725	52,294	(1.1)
Revenues including intersegment activity	1,029,442	921,144	11.8	2,112,410	1,845,611	14.5
Intersegment eliminations	(42,605)	(34,881)	22.1	(80,286)	(71,664)	12.0
Revenues as reported	$ 986,837	$ 886,263	11.3%	$ 2,032,124	$ 1,773,947	14.6%

	Three Months Ended June 30, 2018	Three Months Ended June 30, 2017	% Variance	Six Months Ended June 30, 2018	Six Months Ended June 30, 2017	% Variance
Cost of goods sold:						
Ethanol production	$ 581,613	$ 612,646	(5.1%)	$ 1,146,172	$ 1,211,784	(5.4%)
Agribusiness and energy services	165,174	152,110	8.6	366,886	318,504	15.2
Food and ingredients	206,440	100,009	106.4	466,205	183,044	154.7
Partnership	-	-	*	-	-	*
Intersegment eliminations	(42,602)	(34,746)	22.6	(80,303)	(71,417)	12.4
	$ 910,625	$ 830,019	9.7%	$ 1,898,960	$ 1,641,915	15.7%

	Three Months Ended June 30, 2018	Three Months Ended June 30, 2017	% Variance	Six Months Ended June 30, 2018	Six Months Ended June 30, 2017	% Variance
Operating income (loss):						
Ethanol production	$ (17,214)	$ (22,459)	23.4%	$ (44,743)	$ (29,057)	(54.0%)
Agribusiness and energy services	12,166	3,083	294.6	19,230	9,452	103.4
Food and ingredients	12,981	10,714	21.2	25,566	20,340	25.7
Partnership	16,129	14,798	9.0	31,489	31,417	0.2
Intersegment eliminations	144	(80)	*	212	(155)	*
Corporate activities	(12,441)	(9,842)	(26.4)	(23,914)	(18,391)	(30.0)
	$ 11,765	$ (3,786)	410.8%	$ 7,840	$ 13,606	(42.4%)

	Three Months Ended June 30, 2018	Three Months Ended June 30, 2017	% Variance	Six Months Ended June 30, 2018	Six Months Ended June 30, 2017	% Variance
EBITDA:						
Ethanol production	$ 3,362	$ (873)	*	$ (3,733)	$ 12,951	*
Agribusiness and energy services	12,796	3,747	241.5%	20,498	10,760	90.5%
Food and ingredients	19,044	13,955	36.5	35,041	26,469	32.4
Partnership	17,138	16,066	6.7	33,761	33,960	(0.6)
Intersegment eliminations	144	(80)	*	212	(155)	*
Corporate activities	(10,642)	(8,742)	(21.7)	(20,817)	(16,063)	(29.6)
	$ 41,842	$ 24,073	73.8%	$ 64,962	$ 67,922	(4.4%)

* Percentage variance not considered meaningful.

We use EBITDA as a segment measure of profitability to compare the financial performance of our reportable segments and manage those segments. We believe EBITDA is a useful measure to compare our performance against other companies. EBITDA should not be considered an alternative to, or more meaningful than, net income, which is prepared in accordance with GAAP. EBITDA calculations may vary from company to company. Accordingly, our computation of EBITDA may not be comparable with a similarly titled measure of other companies.

The following table reconciles net income (loss) to EBITDA for the periods indicated (in thousands):

	Three Months Ended June 30, 2018	Three Months Ended June 30, 2017	Six Months Ended June 30, 2018	Six Months Ended June 30, 2017
Net income (loss)	$ 3,751	$ (11,796)	$ (15,704)	$ (10,145)
Interest expense	22,021	19,430	44,149	37,926
Income tax benefit	(10,753)	(9,749)	(16,780)	(12,130)
Depreciation and amortization	26,823	26,188	53,297	52,271
EBITDA	$ 41,842	$ 24,073	$ 64,962	$ 67,922

Three Months Ended June 30, 2018, Compared with the Three Months Ended June 30, 2017

Consolidated Results

Consolidated revenues increased $100.6 million for the three months ended June 30, 2018, compared with the same period in 2017, primarily as a result of the acquisitions of cattle feeding operations at the end of the first quarter and at the beginning of the second quarter of 2017. The increase was partially offset by lower average realized prices for ethanol and corn oil.

Operating income increased $15.6 million and EBITDA increased $17.8 million for the three months ended June 30, 2018 compared with the same period last year primarily due to higher cattle volumes sold, increased average prices for distiller grains and increased margins in our agribusiness and energy services and ethanol production segments. Interest expense increased $2.6 million for the three months ended June 30, 2018, compared with the same period in 2017, primarily due to higher average debt outstanding as well as higher borrowing costs. Income tax benefit was $10.8 million for the three months ended June 30, 2018, compared with $9.7 million for the same period in 2017.

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

Ethanol Production Segment

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

	Three Months Ended June 30, 2018	2017	% Variance
Ethanol produced (thousands of gallons)	296,282	275,539	7.5
Distillers grains produced (thousands of equivalent dried tons)	739	728	1.5
Corn oil produced (thousands of pounds)	75,556	65,685	15.0
Corn consumed (thousands of bushels)	103,147	95,680	7.8

Revenues in our ethanol production segment decreased $25.4 million for the three months ended June 30, 2018, compared with the same period in 2017 primarily due to lower average ethanol and corn oil prices realized and lower ethanol volumes sold, partially offset by higher average distillers grains prices realized.

Cost of goods sold for our ethanol production segment decreased $31.0 million for the three months ended June 30, 2018, compared with the same period last year due to decreased volumes sold offset by higher corn prices. As a result of the factors identified above, operating income increased $5.2 million and EBITDA increased $4.2 million for the three months ended June 30, 2018, compared with the same period in 2017. Depreciation and amortization expense for the segment was $20.6 million for the three months ended June 30, 2018, compared with $20.1 million for the same period last year.

Agribusiness and Energy Services Segment

Revenues in our agribusiness and energy services segment increased $23.7 million while operating income increased $9.1 million and EBITDA increased by $9.0 million for the three months ended June 30, 2018, compared with the same period in 2017. The increase in revenues was primarily due to an increase in ethanol trading activity, partially offset by a decrease in grain and corn oil trading activity and lower average realized prices for corn oil. Operating income and EBITDA increased primarily as a result of increased trading activity margins.

Food and Ingredients Segment

Revenues in our food and ingredients segment increased $109.2 million for the three months ended June 30, 2018, compared with the same period in 2017. The increase in revenues was primarily due to an increase in cattle volumes sold as a result of the acquisitions of cattle feeding operations during the first and second quarters of 2017. Cattle head sold for the three months ended June 30, 2018 and 2017 was approximately 118,000 and 38,000, respectively.

Operating income increased by $2.3 million and EBITDA increased $5.1 million for the three months ended June 30, 2018, compared with the same period in 2017 primarily due to the increase in cattle volumes outlined above. During the three months ended June 30, 2018, the company recognized a gain within other income of $2.6 million related to property insurance proceeds received in excess of the book value of certain fixed assets that were damaged at the Hereford cattle feed yard.

Partnership Segment

Revenues generated by our partnership segment increased $0.8 million for the three months ended June 30, 2018 compared to the same period of 2017, due to higher storage and throughput volumes and trucking revenue, partially offset by a reduction in revenues generated from our rail transportation services. Operating income increased $1.3 million and EBITDA increased $1.1 million for the three months ended June 30, 2018, compared with the same period in 2017 primarily due to lower railcar lease expense associated with our terminal operations.

Intersegment Eliminations

Intersegment eliminations of revenues increased by $7.7 million for the three months ended June 30, 2018, compared with the same period in 2017 due to increased intersegment corn purchases within the agribusiness and energy services segment as well as increased intersegment distillers grain revenues within the ethanol production segment, both primarily due to sales to the food and ingredients segment for cattle feed.

Corporate Activities

Operating income was impacted by an increase in operating expenses for corporate activities of $2.6 million for the three months ended June 30, 2018, compared with the same period in 2017 primarily due to increased selling, general and administrative expenses related to personnel costs in 2018.

Income Taxes

We recorded income tax benefit of $10.8 million for the three months ended June 30, 2018, compared with $9.7 million for the same period in 2017. The increase in income tax benefit was due primarily to the company's recognition of a net tax benefit of $8.3 million during the three months ended June 30, 2018 for federal and state R&D Credits relating to current and prior periods.

Six Months Ended June 30, 2018, Compared with the Six Months Ended June 30, 2017

Consolidated Results

Consolidated revenues increased $258.2 million for the six months ended June 30, 2018, compared with the same period in 2017, primarily as a result of the acquisitions of cattle feeding operations at the end of the first quarter and at the beginning of the second quarter of 2017. The increase was also driven by additional natural gas volumes sold, partially offset by a decrease in volumes for ethanol and distillers grains and lower average realized prices for ethanol and corn oil.

Operating income decreased $5.8 million and EBITDA decreased $3.0 million for the six months ended June 30, 2018 compared with the same period last year primarily due to decreased margins in our ethanol production segment. Interest expense increased $6.2 million for the six months ended June 30, 2018, compared with the same period in 2017, primarily due to higher average debt outstanding as well as higher borrowing costs. Income tax benefit was $16.8 million for the six months ended June 30, 2018, compared with $12.1 million for the same period in 2017.

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

Ethanol Production Segment

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

	Six Months Ended June 30,		
	2018	**2017**	**% Variance**
Ethanol produced (thousands of gallons)	576,692	601,965	(4.2)
Distillers grains produced (thousands of equivalent dried tons)	1,468	1,605	(8.5)
Corn oil produced (thousands of pounds)	144,690	141,042	2.6
Corn consumed (thousands of bushels)	200,430	209,165	(4.2)

Revenues in our ethanol production segment decreased $81.0 million for the six months ended June 30, 2018, compared with the same period in 2017 primarily due to lower volumes of ethanol and distillers grains sold in addition to lower average ethanol and corn oil prices realized, partially offset by higher average distillers grains prices realized.

Cost of goods sold for our ethanol production segment decreased $65.6 million for the six months ended June 30, 2018, compared with the same period last year due to lower production volumes and lower corn prices. As a result of the factors identified above, operating income decreased $15.7 million and EBITDA decreased $16.7 million for the six months ended June 30, 2018, compared with the same period in 2017. Depreciation and amortization expense for the segment was $41.0 million for the six months ended June 30, 2018, compared with $40.5 million for the same period last year.

Agribusiness and Energy Services Segment

Revenues in our agribusiness and energy services segment increased $59.1 million while operating income increased $9.8 million and EBITDA increased by $9.7 million for the six months ended June 30, 2018, compared with the same period in 2017. The increase in revenues was primarily due to an increase in ethanol and natural gas trading activity, partially offset by a decrease in corn oil trading activity and lower average realized prices for corn oil. Operating income and EBITDA increased primarily as a result of increased trading activity margins.

Food and Ingredients Segment

Revenues in our food and ingredients segment increased $289.3 million for the six months ended June 30, 2018, compared with the same period in 2017. The increase in revenues was primarily due to an increase in cattle volumes sold as a result of the acquisitions of cattle feeding operations during the first and second quarters of 2017. Cattle head sold for the six months ended June 30, 2018 and 2017 was approximately 255,000 and 80,000, respectively.

Operating income increased by $5.2 million and EBITDA increased $8.6 million for the six months ended June 30, 2018, compared with the same period in 2017 primarily due to the increase in cattle volumes and margins outlined above. During the six months ended June 30, 2018, the company recognized a gain within other income of $2.6 million related to property insurance proceeds received in excess of the book value of certain fixed assets that were damaged at the Hereford cattle feed yard.

Partnership Segment

Revenues generated by our partnership segment decreased $0.6 million for the six months ended June 30, 2018 compared to the same period of 2017, due to lower revenues generated from our rail transportation and terminal services. Operating income increased $0.1 million for the six months ended June 30, 2018, compared with the same period in 2017 primarily due to a decrease in railcar lease expense, partially offset by increased wages, fuel and other expenses. EBITDA decreased $0.2 million for the six months ended June 30, 2018, compared with the same period in 2017 primarily due to the decrease in revenue.

Intersegment Eliminations

Intersegment eliminations of revenues increased by $8.6 million for the six months ended June 30, 2018, compared with the same period in 2017 due to increased intersegment corn purchases within the agribusiness and energy services segment as well as increased intersegment distillers grain revenues within the ethanol production segment, both primarily due to sales to the food and ingredients segment for cattle feed.

Corporate Activities

Operating income was impacted by an increase in operating expenses for corporate activities of $5.5 million for the six months ended June 30, 2018, compared with the same period in 2017 primarily due to increased selling, general and administrative expenses related to personnel costs in 2018.

Income Taxes

We recorded income tax benefit of $16.8 million for the six months ended June 30, 2018, compared with $12.1 million for the same period in 2017. The increase in income tax benefit was due primarily to the company's recognition of a net tax benefit of $8.3 million during the six months ended June 30, 2018 for federal and state R&D Credits relating to current and prior periods.

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 June 30, 2018, we had $235.1 million in cash and equivalents, excluding restricted cash, consisting of $171.9 million held at our parent company and the remainder held at our subsidiaries. Additionally, we had $15.9 million in restricted cash at June 30, 2018. We also had $568.6 million available under our 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 June 30, 2018, our subsidiaries had approximately $166.0 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. As a result of the $500 million term loan agreement and related debt extinguishment at Green Plains Processing and Fleischmann's Vinegar, we no longer consider certain subsidiaries to have restrictions on cash and asset distributions.

Net cash provided by operating activities was $45.9 million for the six months ended June 30, 2018, compared with $37.7 million used for the same period in 2017. Operating activities compared to the prior year were primarily affected by a decrease in inventory, partially offset by lesser decreases in accounts payable and accrued liabilities as well as decreases in operating income when compared to the same period of the prior year. Net cash used in investing activities was $11.0 million for the six months ended June 30, 2018, due primarily to capital expenditures at our existing ethanol and vinegar plants partially offset by cash received from other investing activities. Net cash used in financing activities was $96.2 million for the six months ended June 30, 2018 compared with $15.7 million for the same period in 2017, with the increase in cash used resulting from higher repayments of short-term borrowings.

Additionally, Green Plains Trade, Green Plains Cattle 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 $14.6 million in the first six months of 2018 for various maintenance and expansion projects. Capital spending for the remainder of 2018 is expected to be approximately $11.3 million for various projects, which are expected to be financed with cash provided by operating activities and available borrowings under our credit facilities.

Our business is highly sensitive to the price of commodities, particularly for corn, ethanol, distillers grains, corn oil, natural gas and cattle. 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.

We have paid a quarterly cash dividend since August 2013 and anticipate declaring a cash dividend in future quarters on a regular basis. Future declarations of dividends, however, are subject to board approval and may be adjusted as our liquidity, business needs or market conditions change. On May 9, 2018, our board of directors declared a quarterly cash dividend of $0.12 per share. The dividend was paid on June 15, 2018, to shareholders of record at the close of business on May 25, 2018.

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 our general partner plus all or any portion of the cash on hand resulting from working capital borrowings made subsequent to the end of that quarter. On July 19, 2018, the board of directors of the general partner of the partnership declared a cash distribution of $0.475 per unit on outstanding common and subordinated units. The distribution is payable on August 10, 2018, to unitholders of record at the close of business on August 3, 2018.

In August 2014, we announced a share repurchase program of up to $100 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. We did not repurchase any shares during the second quarter of 2018 due to certain restrictions under the term loan agreement. To date, we have repurchased 909,667 shares of common stock for approximately $16.7 million under the program.

We believe we have sufficient working capital for our existing operations. A sustained period of unprofitable operations, however, may strain our liquidity, making it difficult to maintain compliance with our financing arrangements. We may sell additional equity or borrow capital to improve or preserve our liquidity, expand our business or build additional or acquire existing 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 11 – 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, 2017.

We were in compliance with our debt covenants at June 30, 2018. Based on our forecasts and the current margin environment, 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.

Corporate Activities

On August 29, 2017, the company and substantially all of the company's subsidiaries, but not including Green Plains Partners and certain other entities as guarantors, entered into a $500.0 million term loan agreement with BNP Paribas, as administrative agent and collateral agent and certain other financial institutions, which matures on August 29, 2023, and may be prepaid at any time without premium or penalty other than customary breakage costs with respect to Eurodollar-based loans or certain other limited circumstances in which event a 1.0% prepayment premium would be due.

The term loan agreement requires principal payments of $1.25 million on the last day of each quarter, beginning on December 31, 2017, with a final installment payable on August 29, 2023, equal to the unpaid principal and interest balances of the term loan agreement. Beginning in 2018, the credit facility also has a provision requiring the company to make special annual payments of 50% or 75% of its available free cash flow, subject to certain limitations. The term loan bears interest at a floating rate of a base rate plus a margin of 4.50% or LIBOR plus a margin of 5.50%.

The term loan agreement is guaranteed by the company and the term loan obligors, and secured by substantially all of the assets of the company and the term loan obligors, including 17 ethanol production facilities with annual capacity of approximately 1.5 billion gallons, as well as the vinegar production facilities.

The term loan agreement provides for customary events of default, which include (subject in certain cases to customary grace and cure periods), among others, the following: nonpayment of principal or interest; breach of covenants or other agreements in the term loan agreement; defaults in failure to pay certain other indebtedness; and certain events of bankruptcy or insolvency. If any event of default occurs, the remaining principal balance and accrued interest on the term loan agreement will become immediately due and payable.

In September 2013, we issued $120.0 million of 3.25% convertible senior notes due in 2018, or 3.25% notes, which are senior, unsecured obligations with interest payable on April 1 and October 1 of each year. Prior to April 1, 2018, the 3.25% notes were not convertible unless certain conditions are satisfied. The conversion rate is subject to adjustment upon the occurrence of certain events, including when the quarterly cash dividend exceeds $0.04 per share. The conversion rate was recently adjusted as of June 30, 2018 to 50.6481 shares of common stock per $1,000 of principal, which is equal to a conversion price of approximately $19.74 per share. We may settle the 3.25% notes in cash, common stock or a combination of cash and common stock. For all conversions of notes which occur on or after April 1, 2018, the company elected to convert for whole shares of common stock with any fractional share being settled with cash in lieu.

During fiscal year 2017, approximately $56.3 million in aggregate principal of the 3.25% notes were exchanged for cash and 2,783,725 shares of the company's common stock. During the three months ended June 30, 2018, an additional 50 shares of the company's common stock were exchanged for approximately $1 thousand in aggregate principal amount of the 3.25% notes. Following the closing of these agreements, $63.7 million aggregate principal of the 3.25% notes remain outstanding.

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.

Ethanol Production Segment

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

Agribusiness and Energy Services Segment

Green Plains Grain has a $125.0 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 2019. 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 $250.0 million. At June 30, 2018, the outstanding principal balance was $71.8 million on the facility and our interest rate was 5.22%.

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 June 30, 2018, the outstanding principal balance was $131.2 million on the facility and the interest rate was 4.27%.

Green Plains Commodity Management has an uncommitted $20.0 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 June 30, 2018, the outstanding principal balance was $11.4 million on the facility and the interest rate was 3.73%.

Food and Ingredients Segment

Green Plains Cattle has a $425.0 million senior secured asset-based revolving credit facility to finance working capital up to the maximum commitment based on eligible collateral, which matures in April of 2020. This facility can be increased by up to $75.0 million with agent approval and includes a swing-line sublimit of $20.0 million. At June 30, 2018, the outstanding principal balance was $243.1 million on the facility and our interest rate was 4.11%.

Advances under the revolving credit facility, as amended, are subject to variable interest rates equal to LIBOR plus 2.0% to 3.0% or the base rate plus 1.0% to 2.0%, depending on the preceding three months' excess borrowing availability. The unused portion of the credit facility is also subject to a commitment fee of 0.20% to 0.30% per annum, depending on the preceding three months' excess borrowing availability. Interest is payable as required, but not less than quarterly in arrears and principal is due upon maturity.

Subsequent to June 30, 2018, the company amended the Green Plains Cattle senior secured asset-based revolving credit facility, increasing the maximum commitment from $425.0 million to $500.0 million. The amended credit facility also includes an accordion feature that enables the credit facility to be increased by up to $100.0 million with agent approval.

Partnership Segment

Green Plains Partners, through a wholly owned subsidiary, has a $235.0 million revolving credit facility, which matures on July 1, 2020, to fund working capital, acquisitions, distributions, capital expenditures and other general partnership purposes. On February 20, 2018, the partnership accessed a portion of its available accordion to increase the revolving credit facility by $40.0 million, from $195.0 million to $235.0 million. At June 30, 2018, the outstanding principal balance was $128.9 million on the facility and the interest rate was 4.86%.

Contractual Obligations

Contractual obligations as of June 30, 2018, were as follows (in thousands):

	Payments Due By Period				
Contractual Obligations	**Total**	**Less Than 1 Year**	**1-3 Years**	**3-5 Years**	**More Than 5 Years**
Long-term and short-term debt obligations (1)	$ 1,343,485	$ 528,004	$ 141,208	$ 182,035	$ 492,238
Interest and fees on debt obligations (2)	247,208	68,816	89,306	75,249	13,837
Operating lease obligations (3)	100,092	28,723	35,721	13,846	21,802
Other	13,227	424	6,544	4,379	1,880
Purchase obligations:					
Forward grain purchase contracts (4)	306,066	299,146	4,503	2,000	417
Other commodity purchase contracts (5)	175,231	175,231	-	-	-
Other	419	209	210	-	-
Total contractual obligations	$ 2,185,728	$ 1,100,553	$ 277,492	$ 277,509	$ 530,174

(1) Includes the current portion of long-term debt 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, depreciation of property and equipment, asset retirement obligations, 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, 2017.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements other than the operating leases, which are entered into during the ordinary course of business and disclosed in the *Contractual Obligations* section above.

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 $6.0 million per year. At June 30, 2018, we had $1.3 billion in debt, $1.1 billion 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 11 – 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, 2017.

Commodity Price Risk

Our business is highly sensitive to commodity price risk, particularly for corn, corn oil, natural gas, ethanol, distillers grains and cattle. Corn prices are affected by weather conditions, yield, changes in domestic and global supply and demand, and government programs and policies. 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. 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. Distillers grains prices are impacted by livestock numbers on feed, prices for feed alternatives and supply, which is associated with ethanol plant production. Cattle prices are impacted by weather conditions, overall economic conditions and government regulations.

To reduce the risk associated with fluctuations in the price of corn, natural gas, ethanol, distillers grains, corn oil and cattle, 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 and the New York 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 and six months ended June 30, 2018, revenues included net gains of $6.7 million and $9.4 million, respectively, and cost of goods sold included net gains of $7.8 million and net losses of $8.7 million, respectively, 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 June 30, 2018, are 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	1,470,000	Gallons	$ 167,585
Corn	518,000	Bushels	$ 152,095
Distillers grains	4,100	Tons (2)	$ 37,717
Corn oil	359,000	Pounds	$ 6,802
Natural gas	41,700	MmBTU	$ 7,030

(1) Estimated volumes reflect anticipated expansion of production capacity at our ethanol plants and assumes 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 and related market risk at June 30, 2018 was immaterial.

Food and Ingredients Segment

In the food and ingredients segment, our physical cattle 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 cattle, 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 purchase and sale contracts for cattle. 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 $7.3 million for cattle at June 30, 2018. Our market risk at that date, based on the estimated net income effect resulting from a hypothetical 10% change in price, was approximately $0.6 million.

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 $19.0 million for grain and other cattle feed at June 30, 2018. Our market risk at that date, based on the estimated net income effect resulting from a hypothetical 10% change in price, was approximately $0.4 million.

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 June 30, 2018, 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, 2017, 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, 2017. 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 factor supplements and/or updates 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.

Government mandates affecting ethanol usage could change and impact the ethanol market.

Under the provisions of the EISA, Congress established a mandate setting the minimum volume of renewable fuels that must be blended with gasoline under the RFS II, which affects the domestic market for ethanol. The EPA has the authority to waive the requirements, in whole or in part, if there is inadequate domestic renewable fuel supply or the requirement severely harms the economy or the environment. After 2022, volumes shall be determined by the EPA in coordination with the Secretaries of Energy and Agriculture, taking into account such factors as impact on environment, energy security, future rates of production, cost to consumers, infrastructure, and other factors such as impact on commodity prices, job creation, rural economic development, or impact on food prices.

Our operations could be adversely impacted by legislation or EPA actions, as set forth below or otherwise, that may reduce the RFS II mandate. Similarly, should federal mandates regarding oxygenated gasoline be repealed, the market for domestic ethanol could be adversely impacted. Economic incentives to blend based on the relative value of gasoline versus ethanol, taking into consideration the octane value of ethanol, environmental requirements and the RFS II mandate, may affect future demand. A significant increase in supply beyond the RFS II mandate could have an adverse impact on ethanol prices. Moreover, changes to RFS II could negatively impact the price of ethanol or cause imported sugarcane ethanol to become more economical than domestic ethanol.

According to 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. Since 2018 is the first year the total RVOs are more than 20% below statutory levels, the EPA Administrator directed his staff to initiate the required technical analysis to perform any future reset consistent with the reset rules. If 2019 RVOs are also more than 20% below statutory levels, the RVO reset will be triggered under RFS II and the EPA will be required to modify statutory volumes through 2022 within one year of the trigger event, based on the same factors used to set the RVOs post-2022.

The U.S. Federal District Court for the D.C. Circuit ruled on July 28, 2017, in favor of the Americans for Clean Energy and its petitioners against the EPA related to its decision to lower the 2016 volume requirements. The Court concluded the EPA erred in how it interpreted the "inadequate domestic supply" waiver provision of RFS II, which authorizes the EPA to consider supply-side factors affecting the volume of renewable fuel available to refiners, blenders, and importers to meet the statutory volume requirements. As a result, the Court vacated the EPA's decision to reduce the total renewable fuel volume requirements for 2016 through its waiver authority, which the EPA is expected to address.

On November 22, 2017, the EPA issued a Notice of Denial of Petitions for rulemaking to change the RFS point of obligation which resulted in the EPA confirming the point of obligation will not change. However, Valero Energy and refining trade group American Fuel and Petrochemical Manufacturers (AFPM) have challenged the EPA's handling of the U.S. biofuel mandate in separate actions on January 26, 2018. AFPM is asking the D.C. U.S. Court of Appeals to review the EPA's November 2017 decision to reject proposed changes to the structure of the RFS, including moving the point of obligation from refiners and importers of fuel to fuel blenders. Valero filed two petitions with the same court, one seeking review of the annual Renewable Volume Obligation (RVO) rule set by the EPA for 2018 and 2019, which dictates the volumes of renewable fuels to be blended in the coming years, and a second arguing against the EPA's December 2017 assertion that the agency has fulfilled its duty to periodically review the RFS as directed by statute.

Future demand may be influenced by economic incentives to blend based on the relative value of gasoline versus ethanol, taking into consideration the octane value of ethanol, environmental requirements and the RFS II mandate. A significant increase in supply beyond the RFS II mandate could have an adverse impact on ethanol prices. Moreover, any changes to RFS II originating from issues associated with the market price of RINs could negatively impact the demand for ethanol, discretionary blending of ethanol and/or the price of ethanol. Recent actions by the EPA to grant small refiner exemptions as well as the Philadelphia Energy Solutions Bankruptcy Court's decision to grant RIN relief have resulted in lower RIN prices.

Flexible-fuel vehicles, which are designed to run on a mixture of fuels such as E85, receive preferential treatment to meet corporate average fuel economy standards in the form of CAFE credits. Flexible-fuel vehicle credits have been decreasing since 2014 and will be completely phased out by 2020. Absent CAFE preferences, auto manufacturers may not be willing to build flexible-fuel vehicles, reducing the growth of E85 markets and resulting in lower ethanol prices.

To the extent federal or state laws or regulations are modified, the demand for ethanol may be reduced, which could negatively and materially affect our financial performance.

We may be affected by our portfolio optimization strategy.

We announced that we are evaluating the performance of our entire portfolio of assets and businesses. Based on this evaluation, we may sell certain assets or businesses or exit particular markets that are no longer a strategic fit or no longer meet their growth or profitability targets. Depending on the nature of the assets sold, our profitability may be impacted by lost operating income or cash flows from such businesses. In addition, divestitures we complete may not yield the targeted improvements in their business and may divert management's attention from our day-to-day operations. Any charges that we are required to record or the failure to achieve the intended financial results associated with our portfolio optimization strategy could have an adverse effect on our business, financial condition or results of operations.

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 second quarter of 2018:

Period	Total Number of Shares Withheld for Employee Awards		Average Price Paid per Share
April 1 - April 30	-	$	-
May 1 - May 31	6,440		19.30
June 1 - June 30	-		-
Total	6,440	$	19.30

In August 2014, we announced a share repurchase program of up to $100 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. We did not repurchase any shares during the second quarter of 2018 due to certain restrictions under the term loan agreement. Approximately $83.3 million of shares are remaining to be repurchased under the program.

On April 13, 2018, we entered into a privately negotiated agreement with a holder, of our 3.25% Convertible Senior Notes due 2018 (the "2018 Notes"). Under the agreement, we exchanged 50 shares of our common stock, par value $0.01 per share, for $1 thousand in aggregate principal amount of the 2018 Notes. The exchange was completed on April 23, 2018.

The exchange of treasury shares of common stock for the 2018 Notes is being made pursuant to an exemption from registration provided in Section 4(a)(2) of the Securities Act of 1933, as amended.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

Green Plains Commodity Management Credit Agreement

On April 30, 2018 Green Plains Commodity Management entered into an agreement for an uncommitted $20.0 million revolving credit facility, which matures on April 30, 2023, to finance margins related to its hedging programs. Advances are subject to variable interest rates equal to LIBOR plus 1.75%. This credit agreement is filed as Exhibit 10.2 to this Quarterly Report on Form 10-Q and incorporated herein by reference.

Item 6. Exhibits.

Exhibit Index

Exhibit No.	Description of Exhibit
10.1	Replacement Page for Fifth Amendment to the Credit Agreement, dated as of November 16, 2017, among Green Plains Cattle Company LLC, Bank of the West and ING Capital LLC, as Joint Administrative Agents, and the lenders party to the Credit Agreement, originally filed as Exhibit 10.1 to the company's Current Report on Form 8-K dated November 17, 2017
10.2	Credit Agreement, dated April 30, 2018, by and among Green Plains Commodity Management LLC (as borrower) and Macquarie Bank Limited (as agent for lenders)
10.3	Second Amendment to Term Loan Agreement, dated July 13, 2018, among Green Plains Inc. and BNP Paribas, as administrative agent and collateral agent
10.4	Sixth Amendment to the Credit Agreement, dated as of July 31, 2018, by and among Green Plains Cattle Company LLC and Bank of the West and ING Capital LLC, as Joint Administrative Agents, and the lenders party to the Credit Agreement
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 June 30, 2018, formatted in Extensible Business Reporting Language (XBRL): (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

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: August 2, 2018

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

Date: August 2, 2018

By: */s/ John W. Neppl* _
John W. Neppl
Chief Financial Officer
(Principal Financial Officer)

REPLACEMENT PAGE FOR FIFTH AMENDMENT TO THE CREDIT AGREEMENT

This Fifth Amendment to the Credit Agreement ("**Amendment**") is dated as of November 16, 2017, between by and among GREEN PLAINS CATTLE COMPANY LLC (the "**Borrower**"), the commercial, banking or financial institutions whose signatures appear on the signature pages hereof or which hereafter become parties to the Credit Agreement (as defined below) (and such commercial, banking or financial institutions are sometimes referred to hereinafter collectively as the "**Lenders**" and individually as a "**Lender**"), and BANK OF THE WEST and ING CAPITAL, LLC, as "**Joint Administrative Agent**"). Borrower, Lenders, and the Joint Administrative Agent agree as follows:

PRELIMINARY STATEMENT. Borrower, Lenders, and the Joint Administrative Agent entered into that certain Credit Agreement dated as of December 3, 2014 (that credit agreement as amended herein and by any and all other modifications or amendments thereto is hereinafter referred to as the "**Credit Agreement**"; the terms defined in the Credit Agreement are used herein as therein defined). Borrower, Lenders, and the Joint Administrative Agent wish to amend certain provisions of the Credit Agreement.

NOW, THEREFORE, the parties hereto agree as follows:

Section 1.01 **Amendment to Schedules**. Schedule 1.01(b) and (c) of the Credit Agreement are hereby added to the Credit Agreement, as attached hereto.

Section 1.02 **Amendment to Section 1.01 of the Credit Agreement**. Section 1.01 of the Credit Agreement is hereby amended by amending and restating the definition of "**Swingline Sublimit**" as follows:

"Swingline Sublimit" means an amount equal to the lesser of (a) $20,000,000 and (b) the Revolving Facility. The Swingline Sublimit is part of, and not in addition to, the Revolving Facility.

Section 1.03 **Amendment to Section 2.16 of the Credit Agreement**. Section 2.16 of the Credit Agreement is hereby amended and restated as follows:

2.16 Increase in Revolving Facility.

(a) Request for Increase. Provided there exists no Default, upon notice to the Joint Administrative Agent (which shall promptly notify the Revolving Lenders), the Borrower may from time to time, request an increase in the Revolving Facility (for all such requests) not exceeding $75,000,000 (an "**Incremental Facility**"); provided that (i) any such request for an Incremental Facility shall be in a minimum amount of $10,000,000 plus additional increments in the amount of $5,000,000, and (ii) the Borrower may make a maximum of three (3) such requests. At the time of sending such notice, the Borrower (in consultation with the Joint Administrative Agent) shall specify the time period within which each Revolving Lender is requested to respond which shall in no event be less than ten (10) Business Days from the date of delivery of such notice to the Revolving Lenders.

(b) Lender Elections to Increase. Each Revolving Lender shall notify the Joint Administrative Agent within such time period whether or not in its sole discretion it agrees to increase its Revolving Commitment and, if so, whether by an amount equal to, greater than, or less than its Applicable Revolving Percentage of such requested increase. Any Revolving Lender not responding within

Macquarie Bank Limited

Commodities and Financial Markets

50 Martin Place
Sydney NSW 2000
GPO Box 4294
Sydney NSW 1164

Telephone (61 2) 8232 3333
Facsimile (61 2) 8232 8341
Internet http://www.macquarie.com.au

April 30, 2018

Green Plains Commodity Management LLC
Attn: EVP of Risk
1811 Aksarben Dr.
Omaha, NE 68106
Facsimile: (402) 952-4916

Dear Sir/Madam,

Subject to the terms and conditions set forth in this agreement (as amended, modified or supplemented from time to time, this "Agreement"), Macquarie Bank Limited ("MBL"), an Australian company with limited liability and the indirect parent of Macquarie Futures USA LLC ("MFUSA"), a Delaware limited liability company registered with the U.S. Commodity Futures Trading Commission as a futures commission merchant and with whom you maintain one or more commodity interest account(s) for U.S. and/or foreign futures, options on futures contracts and/or cleared swaps (individually and collectively, the "Futures Account"), wishes to confirm the terms and conditions upon which MBL may in its sole discretion, from time to time during the term of this Agreement, provide a revolving credit facility to Green Plains Commodity Management LLC, a Delaware limited liability company ("Borrower") in connection with the Futures Account.

The terms and conditions of this Agreement are as follows:

I. CREDIT:

A. At MBL's sole option and in its sole discretion, MBL may, upon the request of MFUSA on behalf of Borrower, make advances from MBL to the Futures Account for the account of Borrower from time to time in accordance with the terms hereof ("Advances"). The amount of such Advances shall be reflected in a loan account in Borrower's name (the "Loan Account") maintained on the books and records of MBL. The balance in the Loan Account shall be the outstanding amount owed to MBL by Borrower under this Agreement. Notwithstanding anything to the contrary herein, in no event shall the total outstanding principal amount of Advances at any time (together with accrued and unpaid interest thereon) exceed the amounts set forth in Section III hereof.

B. MFUSA will request such Advances from MBL, and Advances (if made by MBL) will be applied solely to fund (i) initial margin obligations owed by Borrower to MFUSA in connection with the Futures Account ("IM Obligations") and (ii) variation margin obligations owed by Borrower to MFUSA in connection with the Futures Account ("Non-IM Obligations", together with IM Obligations, "Total Obligations"), in each case as determined by MFUSA in its discretion and advised by MFUSA to MBL from time to time.

C. All Advances will be made directly to MFUSA for credit to the Futures Account. Borrower will not be entitled to receive or withdraw any funds in respect of any Advance directly from MBL or indirectly from the proceeds of Advances made on Borrower's behalf to MFUSA by MBL. Notwithstanding anything to the contrary herein or in the agreement governing the Futures Account (the "Customer Agreement"), if at any time any Advance is outstanding hereunder, Borrower shall not be entitled to withdraw or direct the transfer of any funds or assets from the Futures Account.

D. MBL may at any time and with immediate effect require repayment of any or all outstanding Advances, in whole or in part, together with accrued and unpaid interest thereon, on written notice to Borrower. Upon such notice, all such amounts shall be due and payable by Borrower to MBL within two (2) business days. In any event, all outstanding Advances and accrued and unpaid interest thereon, together with all other amounts then owing hereunder, shall be due and payable by Borrower on April 30, 2023 ("Final Maturity"), unless previously paid.

E. For the avoidance of doubt, Borrower hereby acknowledges and agrees that this Agreement does not create any commitment by MBL to provide Advances to Borrower, but merely sets forth certain terms and conditions on which MBL may in its sole discretion, from time to time, do so.

II. ADVANCES:

A. Borrower hereby appoints MFUSA, and MBL shall be entitled to regard MFUSA, as Borrower's lawful and irrevocable attorney-in-fact, fully empowered and authorized to make requests for Advances and transfer funds between MBL and MFUSA on Borrower's behalf without further authority from Borrower. All funds transferred to MBL will be transferred to the account specified in Schedule I hereto, or to such other account identified by MBL from time to time in writing.

B. In all such transfers, MBL is hereby authorized and directed to follow solely the instructions of MFUSA without Borrower's further consent, and MBL may rely on such instructions of MFUSA without further inquiry.

C. Borrower will receive confirmation of Advances outstanding under this Agreement by means of a monthly statement. The daily margin notification Borrower receives shall constitute notice of the balance in the Loan Account.

D. Borrower hereby authorizes MFUSA to pay interest and other amounts due and owing from time to time to MBL or to MFUSA under this Agreement, the Customer Agreement or any other agreement or instrument from available funds constituting Excess in the Futures Account as and when due. In addition, Borrower hereby authorizes MFUSA to apply any such funds constituting Excess in the Futures Account to repay the outstanding principal amount of Advances.

For the purposes of this Agreement, "Excess" means the amount by which the Margin Equity (as defined in the Margins Handbook prepared by the Joint Audit Committee) of the Futures Account exceeds the Initial Margin Requirements (as defined in the Margins Handbook prepared by the Joint Audit Committee) of any relevant Exchange pursuant to Applicable Law. The terms "Exchange" and "Applicable Law" have the meanings given to them in the Customer Agreement.

III. MAXIMUM CREDIT FACILITY AMOUNT:

A. As at any date, the aggregate outstanding principal amount of all Advances made by MBL to Borrower hereunder (together with accrued and unpaid interest thereon) shall not exceed TWENTY MILLION United States Dollars (US$20,000,000.00).

B. Without limiting Section III.A above, as at any date, the aggregate outstanding principal amount of all Advances made by MBL to Borrower hereunder and used or applied to fund Non-IM Obligations (together with accrued and unpaid interest thereon) shall not exceed SEVEN MILLION FIVE HUNDRED THOUSAND United States Dollars (US$7,500,000.00).

C. If any time the aggregate outstanding principal amount of Advances (together with accrued and unpaid interest thereon) exceeds the limits set forth in Section III.A or III.B above, Borrower shall immediately make a payment to MBL to reduce such amount below such limits.

IV. INTEREST:

Borrower agrees to pay interest on the aggregate outstanding principal balance of the Advances at a rate equal to one-week LIBOR plus 175 bps per annum. Interest shall be charged on a 360-day annual basis and shall be payable in arrears monthly and on the Final Maturity (or other date of repayment) of Advances. Such interest shall be reflected in the Loan Account.

V. SECURITY:

A. Borrower hereby pledges and grants in favor of MBL and its successors and assigns, as security for Borrower's obligations hereunder (including without limitation the repayment of Advances made hereunder and payment of interest thereon), a continuing security interest in, lien on and right of setoff against all of Borrower's right, title and interest in, to and under (i) the Futures Account, (ii) all cash, securities, commodity contracts, swap agreements, investment property, financial assets, general intangibles and other assets transferred by Borrower to the Futures Account or otherwise held in, credited to or deposited in the Futures Account, (iii) all interest and distributions with respect to the Futures Account or property therein or credited thereto, and (iv) all cash and non-cash proceeds of any of the foregoing (the "Collateral"); provided that MBL's security interest in the Collateral is subject and subordinate to the security interest, if any, of MFUSA in the Collateral to the extent such Collateral secures any and all obligations of Borrower owing to MFUSA (including without limitation regulatory obligations, fees, commissions and deficits or losses, and any and all margin, settlement or payment obligations and indebtedness of Borrower to MFUSA (whether prior to, on or after the date hereof)) arising from the Futures Account, commodity contracts relating to the Futures Account, and any related obligations to any clearing house or exchange ("MFUSA Indebtedness").

B. Borrower agrees to take such action as MBL may request, and hereby appoints MBL as Borrower's lawful and irrevocable attorney-in-fact, fully empowered and authorized to take such action on behalf of Borrower, to create, preserve, perfect or validate the security interest granted hereunder or to enable MBL to exercise or enforce its rights with respect thereto. Without limiting the foregoing, MBL will be entitled to execute, deliver and, if necessary, file and/or register such documents, including, without limitation, Uniform Commercial Code ("UCC") financing statements or similar statements, in any relevant jurisdiction as may be necessary or appropriate to perfect and continue MBL's security interest in the Collateral.

C. Borrower shall not, and shall not attempt to, (i) close or transfer the Futures Account or modify any agreement or document governing the Futures Account or (ii) pledge, assign or grant a security interest in the Collateral to or for the benefit of any other person (other than MFUSA in respect of the MFUSA Indebtedness), without the prior written consent of MBL.

D. Borrower and MFUSA agree that at all times during the term of this Agreement, MBL shall be entitled to provide instructions and entitlement orders, and MFUSA shall comply with such instructions and entitlement orders, in respect of the Futures Account and the financial assets and commodity contracts therein, including in respect of the application of any value distributed in respect of a commodity contract in the Futures Account, without further consent of Borrower, and accordingly that MBL shall have "control" of the Futures Account within the meaning of Section 9-106 of the New York Uniform commercial Code.

Without limiting the foregoing:

1. MBL shall be entitled at all times to direct MFUSA to withdraw all available funds constituting Excess in the Futures Account and transfer such funds to MBL to be applied against Borrower's obligations hereunder.

2. During the term of this Agreement and subject to the limitation in subsection 3 below, Borrower shall not be entitled to give any instruction or entitlement order in respect of the Futures Account other than instructions as to the purchase or sale of commodity contracts in the Futures Account that are in accordance with the terms of the Customer Account ("Purchase or Sale Instructions");

3. At any time on or following the occurrence of an Event of Default, MBL shall be entitled to deliver to MFUSA a trading termination notice ("Trading Termination Notice"). Following delivery of a Trading Termination Notice by MBL, Borrower shall not be entitled to give any Purchase or Sale Instructions (or, for the avoidance of doubt, any other instructions or entitlement orders in respect of the Futures Account), and MFUSA shall not follow any such instructions of Borrower.

4. MFUSA shall have no liability whatsoever to Borrower for following any instruction or entitlement order from MBL.

5. In the event of any conflict between any instruction or entitlement order of MBL and (to the extent Borrower is permitted to provide instructions or entitlement orders) any instruction or entitlement order of Borrower, as determined by MFUSA in its discretion, the instruction or entitlement order of MBL shall govern.

E. Upon the occurrence of an Event of Default (as defined below), MBL shall be entitled to exercise all rights and remedies of a secured party with respect to the Collateral under applicable law, in addition to its other rights and remedies hereunder.

VI. EVENT OF DEFAULT:

A. The occurrence of any of the following shall constitute an "Event of Default":

1. Any failure by Borrower to pay any amount of interest or principal with respect to any Advance or any other amount due hereunder, as and when due in accordance with this Agreement;

2. Any failure by Borrower to comply with or perform any agreement or other obligation to be complied with or performed by Borrower in accordance with this Agreement;

3. Any representation made by Borrower in this Agreement proves to have been incorrect or misleading in any material respect;

4. Any failure of the Parent Guarantee to be in full force and effect;

5. MBL ceases to have a valid and perfected security interest in the Collateral;

6. Borrower is in default under the Customer Agreement, or the Customer Agreement otherwise ceases to be in full force and effect; or

7. Borrower or Guarantor (i) is insolvent or generally does not pay, is unable to pay, or admits in writing its inability to pay its debts as they become due, (ii) makes a general assignment for the benefit of its creditors, (iii) petitions or applies to any tribunal or court for the appointment of, or otherwise becomes subject to the appointment of, a custodian, receiver or trustee or similar official for itself or a substantial portion of its assets, or a secured party takes possession of all or substantially all its assets; (iv) commences or has commenced against it any proceeding under any bankruptcy, insolvency, reorganization, arrangement, moratorium or similar law in any jurisdiction affecting creditors' rights; (v) presents or becomes subject to a petition for its winding-up or liquidation; or (vi) takes any action in furtherance of or indicating its consent to, approval or acquiescence in any of the foregoing.

B. Upon the occurrence of an Event of Default, MBL may declare all obligations of the Borrower hereunder to be immediately due and payable (and upon the occurrence of an Event of Default described in clause 7 of the definition thereof, all such obligations of the Borrower shall automatically and without need for further action by MBL become immediately due and payable). In addition, MBL may exercise any other rights or remedies it may have under any other agreement or under applicable law.

C. Upon the occurrence of an Event of Default, and without prejudice to any other rights MBL may have, MBL may, at its option, set off any amount owed by MBL to Borrower under any agreement or instrument (whether matured or contingent and irrespective of the currency, place of payment or place of booking of the obligation) against the amounts owed by Borrower to MBL hereunder. To the extent such amounts are so setoff, such amounts will be deemed discharged in all respects. MBL will give notice to Borrower of any setoff hereunder.

VII. BORROWER REPRESENTATIONS AND AGREEMENTS:

Borrower represents, warrants and agrees as of the date of this Agreement and as of any day on which an Advance is outstanding hereunder that:

A. it has full power, authority and legal right to enter into this Agreement and to perform all its obligations hereunder;

B. this Agreement has been duly executed and delivered by Borrower;

C. this Agreement constitutes the legal, valid and binding obligation of Borrower, enforceable in accordance with its terms;

D. the execution, delivery and performance of this Agreement:

(1) are within Borrower's corporate or limited liability company powers, as applicable, have been duly authorized by all necessary corporate or company action, as applicable, are not in contravention of law or the terms of Borrower's by-laws, certificate of incorporation, operating agreement or certificate of formation, as applicable, or other applicable documents relating to Borrower's formation or to the conduct of Borrower's business or of any material agreement or undertaking to which Borrower is a party or by which Borrower is bound,

(2) will not conflict with or violate any law or regulation, or any judgment, order or decree of any governmental authority,

(3) will not require the consent of any governmental authority or any other person, and

(4) will not conflict with, nor result in any breach in any of the provisions of, nor constitute a default under any material agreement or undertaking to which Borrower is a party or by which Borrower is bound; and

E. it owns the Collateral free and clear of all liens, claims, security interests and encumbrances (other than those in favor of MFUSA in respect of the MFUSA Indebtedness), and it will not create, incur, assume or permit to exist any other liens, claims, security interests or encumbrances on the Collateral (other than in favor of MFUSA in respect of the MFUSA Indebtedness).;

F. it has the right to pledge and grant in favor of MBL the security interest in the Collateral hereunder, and

F. MBL has a valid and perfected security interest in the Collateral (subject in terms of priority only to the security interest in the Collateral in favor of MFUSA in respect of the MFUSA Indebtedness).

G. Borrower's jurisdiction of incorporation and chief executive office are as set forth on the first page hereof. Borrower will provide advance written notice to MBL of any change in its jurisdiction of incorporation or the address or location of its chief executive office.

VIII. GUARANTY:

Borrower agrees to deliver to MBL on or prior to the date of this Agreement a guarantee (the "Parent Guarantee") by Green Plains Inc. ("Guarantor") of Borrower's payment obligations arising under this Agreement, the Customer Agreement and any and all other obligations of Borrower to MBL or MFUSA in form and substance acceptable to MBL.

IX. TAXES:

A. Any and all payments made by Borrower hereunder shall be made free and clear of and without deduction for any present or future taxes, levies, imposts, deductions, charges or withholdings, and all liabilities with respect thereto (all such taxes, levies, imposts, deductions, charges, withholdings and liabilities, being hereinafter referred to as "Taxes"). If and to the extent any applicable law requires the Taxes be withheld from any payment hereunder, (i) the amount of such payment shall be increased to the extent necessary to cause MBL to receive (after the withholding of such Taxes) an amount equal to the amount it would have received had the withholding of such Taxes not been required, and (ii) Borrower shall withhold such Taxes from such increased payment and pay such

Taxes to the relevant taxation authority or other governmental authority for the account of MBL in accordance with applicable law.

B. Borrower agrees to pay any present or future stamp or documentary taxes or any other excise or property taxes, charges or similar levies which arise from any payment made hereunder or under any instrument delivered hereunder or from the execution, delivery or registration of, or otherwise with respect to, the Agreement or any instrument delivered hereunder (hereinafter referred to as "Other Taxes").

C. Borrower shall indemnify MBL for the full amount of Taxes or Other Taxes (including, without limitation, any Taxes or Other Taxes imposed by any jurisdiction on amounts payable under this section) paid by MBL or any liability (including penalties, interest and expenses) arising therefrom or with respect thereto, whether or not such Taxes or Other Taxes were correctly or legally asserted. This indemnification shall be made promptly after the date MBL makes written demand therefor.

C. The agreements and obligations of Borrower contained in this section shall survive the termination of this Agreement and under any instrument delivered hereunder.

X. INCREASED COSTS:

In the event that MBL determines that the adoption after the date hereof of any law, rule, regulation, agreement or guideline regarding capital adequacy, or any change in any of the foregoing or in the interpretation or administration of any of the foregoing by any governmental authority, central bank or comparable agency charged with the interpretation or administration thereof, or compliance by MBL (or any lending office of MBL) with any request or directive regarding capital adequacy (whether or not having the force of law) of any such authority, central bank or comparable agency, has or would have the effect of reducing the rate of return on MBL's capital as a consequence of this Agreement or any loans made by MBL pursuant hereto to a level below that which MBL could have achieved but for such applicability, adoption, change or compliance (taking into consideration MBL's policies with respect to capital adequacy) by an amount deemed by MBL to be material, then from time to time Borrower shall pay to MBL such additional amount or amounts as will compensate MBL for any such reduction suffered. MBL will notify Borrower of any event occurring after the date of this Agreement that will entitle MBL to compensation pursuant to this section as promptly as practicable after it obtains knowledge thereof and determines to request such compensation. Determinations by MBL for purposes of this section of the effect of any increase in the amount of capital required to be maintained by MBL and of the amount allocable to this Agreement shall be conclusive.

XI. INDEMNIFICATION:

Borrower shall indemnify MBL and MFUSA and each of their respective directors, officers, employees, agents and controlling persons (each such person being called an "Indemnified Party") against, and hold each Indemnified Party harmless from, any and all losses, claims, damages, liabilities and related expenses, including reasonable counsel fees, charges and disbursements, incurred by or asserted against any Indemnified Party arising out of, in connection with, or as a result of any actual or prospective claim, litigation, investigation or proceeding and regardless of whether any Indemnified Party is a party thereto relating to the execution or delivery b y Borrower of this Agreement or any agreement or instrument contemplated hereby, the making of any Advance, the performance by the parties hereto of their respective obligations hereunder, and the other transactions contemplated hereby, or the use of the proceeds of any Advance; provided that such indemnity shall not, as to any Indemnified Party, be available to the extent that such losses, claims, damages, liabilities or related expenses are determined by a court of competent jurisdiction by final and nonappealable judgment to have resulted from the negligence or willful misconduct of such Indemnified Party. Notwithstanding any other provision of this Agreement, no Indemnified Party shall be liable for any indirect, special, punitive or consequential damages in connection with its activities related to this Agreement.

XII. FURTHER ASSURANCES:

Borrower agrees to execute such further documents evidencing or carrying out the purpose of the foregoing terms and conditions as may be reasonably requested by (i) MBL or MFUSA or (ii) any regulatory authority having jurisdiction over MBL or MFUSA.

XIII. CHOICE OF LAW AND CONSENT TO JURISDICTION; WAIVER OF JURY TRIAL AND IMMUNITIES:

THIS AGREEMENT AND ANY OTHER DOCUMENTS ARISING HEREUNDER AND ALL MATTERS ARISING OUT OF OR RELATED HERETO SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAWS OF THE STATE OF NEW YORK.

BORROWER HEREBY SUBMITS TO THE EXCLUSIVE JURISDICTION OF THE U.S. FEDERAL AND NEW YORK STATE COURTS LOCATED IN THE BOROUGH OF MANHATTAN IN NEW YORK CITY, NEW YORK IN CONNECTION WITH ANY ACTION, SUIT OR PROCEEDING ARISING OUT OF OR RELATED TO THIS AGREEMENT, AND HEREBY WAIVES THE RIGHT TO OBJECT TO THE VENUE OF ANY SUCH ACTION, SUIT OR PROCEEDING IN ANY SUCH COURTS.

EACH PARTY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY SUIT, ACTION OR PROCEEDING RELATING TO THIS AGREEMENT.

IF IN ANY JURISDICTION BORROWER MAY NOW OR HEREAFTER BE ENTITLED TO CLAIM, FOR ITSELF OR ITS ASSETS, IMMUNITY FROM SUIT, ATTACHMENT (BEFORE OR AFTER JUDGMENT) OR OTHER LEGAL PROCESS, BORROWER HEREBY IRREVOCABLY AGREES NOT TO CLAIM, AND HEREBY WAIVES, SUCH IMMUNITY.

XIV. TERMINATION:

This Agreement will remain in effect until such time as it is terminated by Borrower or MBL at any time upon written notice to the other party to this Agreement; provided that this Agreement shall remain in effect until all obligations of Borrower hereunder have been irrevocably paid in full.

XV. MISCELLANEOUS:

A. This Agreement is made only to Borrower and is not for the benefit of, and may not be relied upon, by any third party. This Agreement may not be assigned or transferred by Borrower.

B. Upon execution, this Agreement supersedes and terminates any and all previous agreements between MBL and Borrower concerning credit or similar facilities with respect to the Futures Account. Any outstanding advances under any such previous agreement shall be deemed to be outstanding under, and governed by and subject to, this Agreement.

C. This Agreement may be executed in any number of counterparts, all of which shall constitute one and the same instrument, and any party may execute this Agreement by signing and delivering one or more counterparts.

D. No amendment, modification or waiver of this Agreement shall be effective unless in writing and signed by each of the parties.

E. If any provision of this Agreement is held illegal, void or unenforceable, the remainder of this Agreement will remain in effect.

F. The powers, rights, remedies and privileges contained in this Agreement are cumulative and not exclusive of any powers, rights, remedies and privileges provided by applicable law.

G. No failure or delay in exercising any right, remedy, power or privilege in respect of this Agreement shall operate as a waiver, and a single or partial exercise of any right, remedy, power or privilege will not preclude any subsequent or further exercise of that right, remedy, power or privilege or any other.

H. Any notice or other communication in respect of this Agreement shall be in writing and delivered in person or by overnight mail to the address set forth on the first page hereof (or such other address as the party may specify to the other by notice from time to time). A copy of any legal notices to Borrower shall be sent to the attention of the General Counsel at the address noted on the first page hereof and to fax: (402) 952-4916.

I. In the event of any conflict between this Agreement and the Customer Agreement, this Agreement will govern.

[signature page follows]

Yours sincerely,

MACQUARIE BANK LIMITED

By: /s/ Robert Trevena
Name: Robert Trevena
Title: Division Director

By: /s/ Fiona Smith
Name: Fiona Smith
Title: Division Director

ACCEPTED AND AGREED:

GREEN PLAINS COMMODITY MANAGEMENT LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: VP Finance and Treasurer

ACCEPTED AND AGREED:

MACQUARIE FUTURES USA LLC

By: /s/ Ray Tubridy
Name: Ray Tubridy
Title: President

By: /s/ Michelle A. Crutchfield
Name: Michelle A. Crutchfield
Title: Senior Vice President

Exhibit 10.3

SECOND AMENDMENT TO TERM LOAN AGREEMENT

THIS SECOND AMENDMENT TO TERM LOAN AGREEMENT, dated as of July 13, 2018 (this "Amendment"), is among GREEN PLAINS INC. (the "Borrower"), the lenders signatory hereto (the "Lenders") and BNP PARIBAS, as administrative agent and as collateral agent (the "Administrative Agent").

WHEREAS, the Borrower, various financial institutions and the Administrative Agent are parties to a Term Loan Agreement, dated as of August 29, 2017 (as amended, restated, supplemented or otherwise modified from time to time, the "Loan Agreement");

WHEREAS, pursuant to Section 14.1 of the Loan Agreement, the Borrower has requested that the Lenders and the Administrative Agent make certain amendments to the Loan Agreement as more particularly described herein; and

WHEREAS, the Administrative Agent and the Lenders constituting the Required Lenders are willing to make the amendments to the Loan Agreement provided herein, subject to the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the premises and for other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

SECTION 1 Definitions. Capitalized terms used in this Amendment but not otherwise defined herein, shall have the same meanings given to them in the Loan Agreement.

SECTION 2 Amendments. Subject to the satisfaction of the conditions precedent set forth in Section 4, the Loan Agreement is amended as follows:

2.1 Amendment to Section 10.14. Section 10.14(e) is amended by replacing clause (ii) in its entirety with the following:

> "(ii) if the Acquisition is for aggregate consideration (excluding the portion of such consideration paid or payable for working capital assets funded with the proceeds of any of the ABL Facilities) of more than $50,000,000, the Borrower shall have delivered to the Administrative Agent, at least 10 Business Days prior to such Acquisition (or such shorter period as the Administrative Agent may agree in its sole discretion) to, a certificate of a Responsible Financial Officer of the Borrower demonstrating, to the satisfaction of the Administrative Agent, (A) pro forma compliance with each of the financial covenants set forth in Section 10.7 (as of the last day of the most recently ended Fiscal Quarter and giving pro forma effect to such Acquisition), (B) the pro forma Total First Lien Leverage Ratio (as of the last day of the most recently ended Fiscal Quarter and giving pro forma effect to such Acquisition) is not greater than 4.00 to 1.00, and (C) historical financial statements (audited, if available, or unaudited or summary) for the most recently completed fiscal year

of the business or Person to be acquired (if available, or such shorter period as may be available); and".

SECTION 3 REPRESENTATIONS AND WARRANTIES. To induce the other parties hereto to enter into this Amendment, each Loan Party hereby represents and warrants to the Administrative Agent and the other Lenders that, as of the date hereof:

3.1 Immediately prior to and after giving effect to this Amendment, no Unmatured Event of Default or Event of Default has occurred and is continuing;

3.2 Immediately prior to and after giving effect to this Amendment, all representations and warranties of the Loan Parties contained in the Loan Documents are true and correct in all material respects with the same effect as if made on and as of such date(s), except to the extent such representations and warranties specifically relate to an earlier date, in which case, such representations and warranties were true and correct in all material respects on and as of such earlier date (and except to the extent such representations and warranties are already qualified by materiality in which case such representations and warranties were true and correct in all respects with the same effect as if made on and as of such date(s));

3.3 Each Loan Party is duly organized, validly existing and in good standing under the laws of its state or jurisdiction of incorporation or organization;

3.4 Each Loan Party is duly qualified and authorized to do business and is in good standing as a foreign entity in the jurisdictions where the character of its property or its business activities makes such qualification necessary, except with regard to jurisdictions where the failure to be so qualified or organized, or to be in good standing, as a foreign entity would not have a Material Adverse Effect;

3.5 Each Loan Party has the right and power and is duly authorized and empowered to enter into, execute and deliver the Amendment and to perform and observe the provisions hereof;

3.6 The Amendment has been duly authorized and approved by each Loan Party's Governing Body and has been duly executed and delivered by each Loan Party, and is the legal, valid and binding obligations of each Loan Party, enforceable against each Loan Party in accordance with its terms, except insofar as such enforcement may be limited by (i) applicable bankruptcy, insolvency, reorganization, moratorium, fraudulent transfer and other similar laws relating to or affecting the enforcement of creditors' rights generally and/or (ii) general principles of equity (regardless of whether such enforcement is considered in a proceeding at law or in equity); and

3.7 The execution, delivery and performance of the Amendment will not (i) conflict with, result in any breach in any of the provisions of, constitute a default under, or result in the creation of any Lien (other than Permitted Liens) upon any assets or property of the Loan Parties, under the provisions of, such Person's Organizational Documents or any material agreement to which such Person is a party or (ii) violate any law, rule, regulation, order, writ, judgment, injunction, decree, determination or award that is applicable to or binding on any Loan Party.

SECTION 4 EFFECTIVENESS. This Amendment shall not become effective unless and until each of the conditions precedent set forth below has been satisfied or the satisfaction thereof shall have been waived in writing by the Administrative Agent and the Required Lenders (the date of satisfaction or waiver of such conditions being referred to as the "Amendment Effective Date"):

4.1 Receipt by Administrative Agent of duly executed counterpart signature pages to this Amendment by (i) Lenders that constitute the Required Lenders, and (ii) the Company and each Guarantor;

4.2 The representations and warranties of the Loan Parties contained herein and in the other Loan Documents shall be true and correct in all material respects with the same effect as if made on and as of the Amendment Effective Date, except to the extent such representations and warranties specifically relate to an earlier date, in which case, such representations and warranties were true and correct in all respects on and as of such earlier date (and except to the extent such representations and warranties are already qualified by materiality in which case such representations and warranties were true and correct in all respects with the same effect as if made on and as of such date);

4.3 No event shall have occurred and be continuing or would result from the effectiveness of this Amendment that would constitute an Event of Default or an Unmatured Event of Default; and

4.4 The Borrower shall have paid to Administrative Agent (i) all invoiced reasonable costs and out-of-pocket expenses of the Administrative Agent owing to the Administrative Agent pursuant to Section 14.5 of the Loan Agreement incurred in connection with this Amendment (including without limitation all reasonable fees and expenses of Latham & Watkins LLP) and (ii) for the account for each consenting Lender, a consent fee equal to 0.05% of the aggregate principal amount of Loans held by such consenting Lender under the Loan Agreement as of the Amendment Effective Date.

SECTION 5 REAFFIRMATION. Each Loan Party hereby (a) ratifies and reaffirms all of its payment and performance obligations, contingent or otherwise, and each grant of security interests and Liens in favor of the Administrative Agent or the Lenders, as the case may be, under each Loan Document to which it is a party, (b) agrees and acknowledges that the Liens in favor of the Administrative Agent and the Lenders under each Loan Document continue to constitute valid first priority Liens (subject to the ABL Intercreditor Agreements) on substantially all of the Collateral and such Liens are not subject to avoidance, disallowance or subordination pursuant to any requirement of law, except as enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting the enforcement of creditors' rights generally or by general equitable principles (whether enforcement is sought by proceedings in equity or at law), (c) agrees and acknowledges that the Obligations constitute legal, valid and binding obligations of the Loan Parties, except as enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws relating to or limiting creditors' rights generally and by general equitable principles (whether enforcement is sought by proceedings in equity or at law), and that (i) as of the Amendment Effective Date, no offsets, defenses or counterclaims to the Obligations or any other causes of action with respect to the

Obligations or the Loan Documents exist and (ii) no portion of the Obligations is subject to avoidance, disallowance, reduction or subordination pursuant to any requirement of law, except as enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws relating to or limiting creditors' rights generally and by general equitable principles (whether enforcement is sought by proceedings in equity or at law), (d) agrees that such ratification and reaffirmation is not a condition to the continued effectiveness of the Loan Documents, and (e) agrees that neither such ratification and reaffirmation, nor the Administrative Agent's nor any Lender's solicitation of such ratification and reaffirmation, constitutes a course of dealing giving rise to any obligation or condition requiring a similar or any other ratification or reaffirmation from each party to the Loan Agreement with respect to any subsequent modifications, consent or waiver with respect to the Loan Agreement or other Loan Documents. Each Loan Party acknowledges and agrees that any of the Loan Documents to which it is a party or otherwise bound shall continue in full force and effect and that all of its obligations thereunder shall be valid and enforceable, except as enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws relating to or limiting creditors' rights generally or by general equitable principles (whether enforcement is sought by proceedings in equity or at law), and shall not be impaired or limited by the execution or effectiveness of this Amendment.

SECTION 6 MISCELLANEOUS.

6.1 Continuing Effectiveness, etc. As herein amended, the Loan Agreement shall remain in full force and effect and is hereby ratified and confirmed in all respects. After the effectiveness of this Amendment, all references in the Loan Agreement and the other Loan Documents to "Loan Agreement" or similar terms shall refer to the Loan Agreement as amended hereby. Each other Loan Document is hereby ratified, approved and confirmed in each and every respect.

6.2 Counterparts. This Amendment may be executed in any number of counterparts and by the different parties on separate counterparts, and each such counterpart shall be deemed to be an original but all such counterparts shall together constitute one and the same Amendment. Delivery of a counterpart hereof, or a signature hereto, by facsimile or by email in .pdf or similar format shall be effective as delivery of a manually- executed original counterpart hereof.

6.3 Governing Law. THIS AMENDMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE INTERNAL LAW OF THE STATE OF NEW YORK (WITHOUT REGARD TO CONFLICTS OF LAW PROVISIONS THEREOF)

6.4 Severability. Whenever possible each provision of this Amendment shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Amendment shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Amendment. All obligations of the Loan Parties and rights of the Administrative Agent and the Lenders expressed herein or in any other Loan Document shall be in addition to and not in limitation of those provided by applicable law.

6.5 Incorporation of Loan Agreement Provisions. The provisions of Section 14.14 (Forum Selection and Consent to Jurisdiction) and Section 14.15 (Waiver of Jury Trial) of the Loan Agreement are incorporated by reference as if fully set forth herein, *mutatis mutandis*.

6.6 No Novation. By its execution of this Amendment, each of the parties hereto acknowledges and agrees that the terms of this Amendment do not constitute a novation, but, rather, a supplement of the terms of a pre-existing indebtedness and related agreement, as evidenced by the Loan Agreement.

6.7 Consent of Guarantors. Each Guarantor hereby (a) consents to this Amendment and the transactions contemplated hereby and (b) acknowledges and agrees that the guarantees (and all security therefor) contained in the Loan Agreement and the other Loan Documents previously executed by it are, and shall remain, in full force and effect after giving effect to this Amendment and all other prior modifications to the Loan Agreement, if any.

6.8 Unmatured Events of Default of Events Default. Nothing contained in this Amendment shall be construed or interpreted or is intended as a waiver of or limitation on any rights, powers, privileges or remedies that Administrative Agent or the Lenders have or may have under the Loan Agreement or any other Loan Document on account of any Unmatured Event of Default or Event of Default. Except as expressly set forth in this Amendment, nothing herein shall be deemed to entitle the Borrower or the Guarantors to a consent to, or a waiver, amendment, modification or other change of, any of the terms, conditions, obligations, covenants or agreements contained in the Loan Agreement or the other Loan Documents in similar or different circumstances.

6.9 Lender Credit Decision. Each of the undersigned Lenders acknowledges that it has, independently and without reliance upon any other Lender and based on such documents and information as it has deemed appropriate, made its own credit analysis and decision to enter into this Amendment and to agree to the matters set forth herein. Each of the undersigned Lenders also acknowledges that it will, independently and without reliance upon any other Lender and based on such documents and information as it shall deem appropriate at the time, continue to make its own credit decisions in taking or not taking any action under the Loan Agreement.

6.10 Successors and Assigns. This Amendment shall be binding upon the Borrower, the Lenders and the Administrative Agent and their respective successors and assigns, and shall inure to the benefit of the Borrower, the Lenders and the Administrative Agent and the respective successors and assigns of the Lenders and the Administrative Agent.

6.11 Loan Document. This Amendment is a Loan Document.

[Signature Pages Follow]

IN WITNESS WHEREOF, this Amendment has been duly executed and delivered as of the day and year first above written.

GREEN PLAINS INC.,
as the Borrower

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GUARANTORS:

GREEN PLAINS I LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS II LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

FLEISCHMANN'S VINEGAR COMPANY, INC.

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS AGRICULTURAL AND ENERGY FUND LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS ASSET MANAGEMENT LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS COMMODITY MANAGEMENT LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS CATTLE COMPANY LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS GRAIN COMPANY LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS GRAIN COMPANY TN LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS INDUSTRIAL CLEANING SERVICES LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS TRADE GROUP LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS TRUCKING LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS HEREFORD LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS HOPEWELL LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS MADISON LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS MOUNT VERNON LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS YORK LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS PROCESSING LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS ATKINSON LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS BLUFFTON LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS CENTRAL CITY LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS COMMODITIES LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS CORN OIL LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS FAIRMONT LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS HOLDINGS II LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS OBION LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS ORD LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS OTTER TAIL LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS SHENANDOAH LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS SUPERIOR LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS WOOD RIVER LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

BNP PARIBAS,
as Administrative Agent and Lender

By: /s/ James McHale
Name: James McHale
Title: Managing Director

By: /s/ Sang W. Han
Name: Sang W. Han
Title: Vice President

BNP Paribas Loan Trading,
as Lender

By: /s/ David N. Morin
Name: David N. Morin
Title: Managing Director

If a second signatory is needed:

By: /s/ Matthew Salvner
Name: Matthew Salvner
Title: Managing Director

STATE BANK AND TRUST COMPANY,
SUCCESSOR BY MERGER TO ALOSTAR BANK
OF COMMERCE,
as Lender

By: /s/ Daryn Veney
Name: Daryn Veney
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

AGF Floating Rate Income Fund
By: Eaton Vance Management
as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Brighthouse Funds Trust I
Brighthouse/Eaton Vance Floating Rate Portfolio
By: Eaton Vance Management
as Investment Sub-Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Calvert Management Series-
Calvert Floating-Rate Advantage Fund
By: Calvert Research and Management

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

[Signature Page to Second Amendment to Term Loan Agreement]

Eaton Vance CLO 2013-1 LTD
By: Eaton Vance Management
as Portfolio Manager

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Eaton Vance CLO 2014-1 Ltd.
By: Eaton Vance Management
Portfolio Manager

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Eaton Vance CLO 2015-1 Ltd.
By: Eaton Vance Management
Portfolio Manager

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Eaton Vance Loan Holding Limited
By: Eaton Vance Management
as Investment Manager

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Eaton Vance Floating Rate
Income Plus Fund
By: Eaton Vance Management
as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

[Signature Page to Second Amendment to Term Loan Agreement]

Eaton Vance Floating-Rate
2022 Target Term Trust
By: Eaton Vance Management
as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Eaton Vance Senior Floating-Rate Trust
By: Eaton Vance Management
as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Eaton Vance Floating-Rate Income Trust
By: Eaton Vance Management
as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

[Signature Page to Second Amendment to Term Loan Agreement]

Eaton Vance International (Cayman Islands)
Floating-Rate Income Portfolio
By: Eaton Vance Management
as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Eaton Vance Senior Income Trust
By: Eaton Vance Management
as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Eaton Vance Short Duration
Diversified Income Fund
By: Eaton Vance Management
as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

[Signature Page to Second Amendment to Term Loan Agreement]

Eaton Vance Institutional Senior Loan Fund
By: Eaton Vance Management
as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Eaton Vance Institutional Senior Loan Plus Fund
By: Eaton Vance Management as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Eaton Vance Limited Duration Income Fund
By: Eaton Vance Management
as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Eaton Vance Floating Rate Portfolio
By: Boston Management and Research
as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Florida Power & Light Company
By: Eaton Vance Management
as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

[Signature Page to Second Amendment to Term Loan Agreement]

Pacific Select Fund – Floating Rate Loan Portfolio
By: Eaton Vance Management
as Investment Sub-Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Senior Debt Portfolio
By: Boston Management and Research
as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

[Signature Page to Second Amendment to Term Loan Agreement]

Eaton Vance VT Floating-Rate Income Fund
By: Eaton Vance Management
as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Eaton Vance US Loan Fund 2016 a Series Trust of
Global Cayman Investment Trust
By: Eaton Vance Management
as Investment Advisor

By: /s/ Michael B. Botthof
Name: Michael B. Botthof
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

Buffalo High Yield Fund,
as a Lender

By: /s/ Pavel Antonov
Name: Pavel Antonov
Title: Attorney-in-fact

If a second signatory is needed:

By:
Name:
Title:

Capital Farm Credit, FLCA,
as a Lender

By: /s/ Donald L. Palm
Name: Donald L. Palm
Title: Sr. Vice President – Capital Markets

If a second signatory is needed:

By:
Name:
Title:

Compeer Financial, PCA,
as a Lender

By: /s/ Dale A. Rishardson
Name: Dale A. Richardson
Title: Managing Director – Capital Markets

If a second signatory is needed:

By:
Name:
Title:

Farm Credit Services of America
as a Lender

By: /s/ Kathyrn J. Frahm
Name: Kathryn J. Frahm
Title: VP – Commercial Lender

If a second signatory is needed:

By:
Name:
Title:

[Signature Page to Second Amendment to Term Loan Agreement]

Sequoia IDF Asset Holding S.A.,
as a Lender

By: /s/ Steve Cook
Name: Steve Cook
Title: Director

If a second signatory is needed:

By:
Name:
Title:

[Signature Page to Second Amendment to Term Loan Agreement]

Metropolitan Life Insurance Company, a New York corporation.
By: MetLife Investment Advisors, LLC, a Delaware limited liability company, its investment manager, as a Lender

By: /s/ Kevin J. Harshberger
Name: Kevin J. Harshberger
Title: Director

If a second signatory is needed:

By:
Name:
Title:

Ag County Farm Credit Services,
as a Lender

By: /s/ Nicole Schwartz
Name: Nicole Schwartz
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

WebBank,
as a Lender

By: /s/ Kelly Barnett
Name: Kelly Barnett
Title: President

If a second signatory is needed:

By:
Name:
Title:

[Signature Page to Second Amendment to Term Loan Agreement]

IG Mackenzie Floating Rate Income Fund
Mackenzie Floating Rate Income Fund
Mackenzie Floating Rate Income ETF
Mackenzie Unconstrained Fixed Income Fund
Mackenzie Strategic Income Fund
Symmetry Canadian Bond Fund – 3864SLF
Mackenzie Unconstrained Bond ETF
Mackenzie Global Strategic Income Fund
Mackenzie Income Fund
Mackenzie Cundill Canadian Balanced Fund
Mackenzie Global Tactical Bond Fund
IG Mackenzie Ivy Canadian Balanced Fund
Investors Mortgage and Short Term Income Fund
Mackenzie Ivy Global Balanced Fund
Mackenzie Global Credit Opportunities Fund
iProfile Fixed Income Pool
Mackenzie Canadian Growth Balanced Fund
Investors Dividend Fund
Mackenzie Ivy Canadian Balanced Fund
Mackenzie Canadian All Cap Balanced Fund
Mackenzie Diversified Alternatives Fund
IG Mackenzie Strategic Income Fund
Mackenzie Canadian Balanced Fund
Manulife Sentinel Income (33) Fund UT
Mackenzie Strategic Bond Fund
London Life Income Fund 2.26MF
Mackenzie Canadian Short Term Income Fund
Mackenzie Global High Yield Fixed Income ETF
Investors Canadian Corporate Bond Fund
Mackenzie Global Tactical Investment Grade Bond Fund
Mackenzie Core Plus Global Fixed Income ETF
Mackenzie Investment Grade Floating Rate Fund
London Life Growth and Income Fund 2.27MF
Great-West Life Income Fund 6.06M
Investors Mutual of Canada
Mackenzie USD Global Strategic Income Fund
Mackenzie USD Ultra Short Duration Income Fund
Mackenzie USD Global Tactical Bond Fund
Great-West Life Growth and Income Fund 6.05M
Mackenzie Core Plus Canadian Fixed Income ETF
as a Lender

By: /s/ Movin Mokbel
Name: Movin Mokbel
Title: VP, Investments

By: /s/ Daniel Cooper
Name: Daniel Cooper
Title: VP, Investments

FCS Commercial Finance Group, For AgCountry Farm Credit Services, PCA
as a Lender

By: /s/ Nee Ly
Name: Nee Ly
Title: Assistant President

If a second signatory is needed:

By:
Name:
Title:

[Signature Page to Second Amendment to Term Loan Agreement]

AMMC CLO 15, LIMITED
as a Lender
BY: American Money Management Corp., as Collateral Manager

By: /s/ David P. Meyer
Name: David P. Meyer
Title: Senior Vice President

If a second signatory is needed:

By:
Name:
Title:

AMMC CLO 16, LIMITED
as a Lender
BY: American Money Management Corp., as Collateral Manager

By: /s/ David P. Meyer
Name: David P. Meyer
Title: Senior Vice President

If a second signatory is needed:

By:
Name:
Title:

AMMC CLO 18, LIMITED
as a Lender
By: American Money Management Corp., as Collateral Manager

By: /s/ David Meyer
Name: David Meyer
Title: Senior Vice President

If a second signatory is needed:

By:
Name:
Title:

AMMC CLO 21, LIMITED
as a Lender
By: American Money Management Corp., as Collateral Manager

By: /s/ David Meyer
Name: David Meyer
Title: Senior Vice President

If a second signatory is needed:

By:
Name:
Title:

AMMC CLO 22, LIMITED
as a Lender
By: American Money Management Corp., as Collateral Manager

By: /s/ David Meyer
Name: David Meyer
Title: Senior Vice President

If a second signatory is needed:

By:
Name:
Title:

Pro Assurance Indemnity
as a Lender

By: /s/ Leo Dierckman
Name: Leo Dierckman
Title: Senior VP

If a second signatory is needed:

By:
Name:
Title:

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LINCOLN SQUARE FUNDING ULC
as a Lender

By: /s/ Madonna Sequeira
Name: Madonna Sequeira
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

GOLDMAN SACHS BANK USA,
as a Lender

By: /s/ Chris Lam
Name: Chris Lam
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Sound Point CLO IV-R, Ltd.,
as a Lender

By: Sound Point Capital Management, LP as Collateral Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Sound Point CLO V, Ltd.,
as a Lender

By: Sound Point Capital Management, LP as Collateral Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Sound Point CLO VI, Ltd.,
as a Lender

By: Sound Point Capital Management, LP as Collateral Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Sound Point CLO VII, Ltd.,
as a Lender

By: Sound Point Capital Management, LP as Collateral Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Sound Point CLO VIII, Ltd.,
as a Lender

By: Sound Point Capital Management, LP as Collateral Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Sound Point CLO IX, Ltd., as a Lender

By: Sound Point Capital Management, LP as Collateral Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Sound Point CLO XI, Ltd., as a Lender

By: Sound Point Capital Management, LP as Collateral Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Sound Point CLO XII, Ltd., as a Lender

By: Sound Point Capital Management, LP as Collateral Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Sound Point CLO XIV, Ltd., as a Lender

By: Sound Point Capital Management, LP as Collateral Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Sound Point CLO XVI, Ltd., as a Lender

By: Sound Point Capital Management, LP as Collateral Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Sound Point CLO XVII, Ltd., as a Lender

By: Sound Point Capital Management, LP as Collateral Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Sound Point CLO XVIII, Ltd., as a Lender

By: Sound Point Capital Management, LP as Collateral Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Sound Point CLO XIX, Ltd., as a Lender

By: Sound Point Capital Management, LP as Collateral Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Commonwealth of Pennsylvania, Treasury Department
as a Lender

By: Sound Point Capital Management, LP as Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Commonwealth of Pennsylvania, Treasury Department –
Tuition Account Program
as a Lender

By: Sound Point Capital Management, LP as Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Sound Point Senior Floating Rate Master Fund, L.P.,
as a Lender

By: Sound Point Capital Management, LP as Investment Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

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American Beacon Sound Point Floating Rate Income Fund, a series of American Beacon Funds., as a Lender

By: Sound Point Capital Management, LP as Sub-Advisor

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Kaiser Foundation Hospitals, as a Lender

By: Sound Point Capital Management, LP as Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Kaiser Permanente Group Trust, as a Lender

By: Sound Point Capital Management, LP as Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

PURE Insurance Company, as a Lender

By: Sound Point Capital Management, LP as Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Teamsters Pension Trust Fund of Philadelphia & Vicinity,
as a Lender

By: Sound Point Capital Management, LP as Manager

By: /s/ Xueying Fernandes
Name: Xueying Fernandes
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

CoBank, FCB,
as a Lender

By: /s/ Patrick Sauer
Name: Patrick Sauer
Title: Vice President

If a second signatory is needed:

By:
Name:
Title:

BlackRock Funds II, BlackRock Strategic Income Opportunities Portfolio,
as a Lender

By: BlackRock Advisors, LLC, its Investment Advisor

By: /s/ Gina Forziati
Name: Gina Forziati
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

Strategic Income Opportunities Bond Fund,
as a Lender

By: BlackRock Institutional Trust Company, NA, not in its individual capacity but as Trustee of the Strategic Income Opportunities Bond Fund

By: /s/ Gina Forziati
Name: Gina Forziati
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

ABN AMRO CAPITAL USA LLC,
as a Lender

By: /s/ Javier Ramirez
Name: Javier Ramirez
Title: Director

If a second signatory is needed:

By: /s/ Thomas B. Pinckney
Name: Thomas B. Pinckney
Title: Vice President

Regatta II Funding LP,
as a Lender
By: Napier Park Global Capital (US) LP
Attorney-in-fact

By: /s/ Melanie Hanlon
Name: Melanie Hanlon
Title: Managing Director

If a second signatory is needed:

By:
Name:
Title:

Regatta III Funding Ltd,
as a Lender
By: Napier Park Global Capital (US) LP
Attorney-in-fact

By: /s/ Melanie Hanlon
Name: Melanie Hanlon
Title: Managing Director

If a second signatory is needed:

By:
Name:
Title:

Regatta IV Funding Ltd,
as a Lender
By: Napier Park Global Capital (US) LP
Attorney-in-fact

By: /s/ Melanie Hanlon
Name: Melanie Hanlon
Title: Managing Director

If a second signatory is needed:

By:
Name:
Title:

REGATTA IX FUNDING LTD.,
as a Lender
By: Regatta Loan Management LLC
its Collateral Manager

By: /s/ Melanie Hanlon
Name: Hanlon, Melanie
Title: Managing Director

If a second signatory is needed:

By:
Name:
Title:

Regatta V Funding Ltd
as a Lender
By: Napier Park Global Capital (US) LP
Attorney-in-fact

By: /s/ Melanie Hanlon
Name: Melanie Hanlon
Title: Managing Director

If a second signatory is needed:

By:
Name:
Title:

Regatta VI Funding Ltd
as a Lender
By: Regatta Loan Management LLC its Collateral Manager

By: /s/ Melanie Hanlon
Name: Melanie Hanlon
Title: Managing Director

If a second signatory is needed:

By:
Name:
Title:

Regatta VII Funding Ltd
as a Lender
By: Regatta Loan Management LLC its Collateral Manager

By: /s/ Melanie Hanlon
Name: Melanie Hanlon
Title: Managing Director

If a second signatory is needed:

By:
Name:
Title:

REGATTA VIII FUNDING LTD
as a Lender
By: Regatta Loan Management LLC
attorney-in-fact

By: /s/ Melanie Hanlon
Name: Melanie Hanlon
Title: Managing Director

If a second signatory is needed:

By:
Name:
Title:

REGATTA X FUNDING LTD.
as a Lender
By: Regatta Loan Management LLC
its Collateral Manager

By: /s/ Melanie Hanlon
Name: Melanie Hanlon
Title: Managing Director

If a second signatory is needed:

By:
Name:
Title:

Black Diamond CLO 2013-1 Ltd.
as a Lender
By: Black Diamond CLO 2013-1 Adviser, L.L.C. As its Collateral Manager

By: /s/ Stephen H. Deckoff
Name: Stephen H. Deckoff
Title: Managing Principal

If a second signatory is needed:

By:
Name:
Title:

Black Diamond CLO 2014-1 Ltd.
as a Lender
By: Black Diamond CLO 2014-1 Adviser, L.L.C. As its Collateral Manager

By: /s/ Stephen H. Deckoff
Name: Stephen H. Deckoff
Title: Managing Principal

If a second signatory is needed:

By:
Name:
Title:

Black Diamond CLO 2015-1 Designated Activity Company
as a Lender
By: Black Diamond CLO 2015-1 Adviser, L.L.C. As its Collateral Manager

By: /s/ Stephen H. Deckoff
Name: Stephen H. Deckoff
Title: Managing Principal

If a second signatory is needed:

By:
Name:
Title:

Black Diamond CLO 2016-1 Ltd.
as a Lender
By: Black Diamond CLO 2016-1 Adviser, L.L.C. As its Collateral Manager

By: /s/ Stephen H. Deckoff
Name: Stephen H. Deckoff
Title: Managing Principal

If a second signatory is needed:

By:
Name:
Title:

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Black Diamond CLO 2017-1 Ltd.
as a Lender
By: Black Diamond CLO 2017-1 Adviser, L.L.C. As its Collateral Manager

By: /s/ Stephen H. Deckoff
Name: Stephen H. Deckoff
Title: Managing Principal

If a second signatory is needed:

By:
Name:
Title:

Black Diamond CLO 2017-2 Designated Activity Company
as a Lender
By: Black Diamond CLO 2017-2 Adviser, L.L.C. As its Collateral Manager

By: /s/ Stephen H. Deckoff
Name: Stephen H. Deckoff
Title: Managing Principal

If a second signatory is needed:

By:
Name:
Title:

Black Diamond Credit Strategies Master Fund, Ltd.
as a Lender
BY: BDCM Fund Advisor, L.L.C.,
Its Investment Manager

By: /s/ Stephen H. Deckoff
Name: Stephen H. Deckoff
Title: Managing Principal

If a second signatory is needed:

By:
Name:
Title:

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CBAM 2017-1, LTD
as a Lender

By: /s/ James Kudrako
Name: James Kudrako
Title: Director

If a second signatory is needed:

By:
Name:
Title:

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CBAM 2017-2, LTD
as a Lender

By: /s/ James Kudrako
Name: James Kudrako
Title: Director

If a second signatory is needed:

By:
Name:
Title:

CBAM 2017-3, LTD
as a Lender

By: /s/ James Kudrako
Name: James Kudrako
Title: Director

If a second signatory is needed:

By:
Name:
Title:

CBAM 2017-4, LTD
as a Lender

By: /s/ James Kudrako
Name: James Kudrako
Title: Director

If a second signatory is needed:

By:
Name:
Title:

CVP Cascade CLO 1 LTD
as a Lender

By: /s/ Joseph Matteo
Name: Joseph Matteo
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

CVP CLO 2017-1 LTD
as a Lender

By: /s/ Joseph Matteo
Name: Joseph Matteo
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

CVP CLO 2017-2 LTD
as a Lender

By: /s/ Joseph Matteo
Name: Joseph Matteo
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

CATHEDRAL LAKE CLO 2013, LTD
as a Lender

By: /s/ Lynne B. Alpar
Name: Lynne B. Alpar
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

CATHEDRAL LAKE II, LTD
as a Lender

By: /s/ Lynne B. Alpar
Name: Lynne B. Alpar
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

CATHEDRAL LAKE III, LTD
as a Lender

By: /s/ Lynne B. Alpar
Name: Lynne B. Alpar
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

CATHEDRAL LAKE IV, LTD
as a Lender

By: /s/ Lynne B. Alpar
Name: Lynne B. Alpar
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

DAVENPORT FUNDING, LLC
as a Lender

By: /s/ Madonna Sequeira
Name: Madonna Sequeira
Title: Authorized Signatory

If a second signatory is needed:

By:
Name:
Title:

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THL Credit Logan JV SPV I LLC
as a Lender
By: THL Credit Logan JV LLC, its Designated Manager

By: /s/ Chris Flynn
Name: Chris Flynn
Title: Director

If a second signatory is needed:

By:
Name:
Title:

THL Credit Wind River 2012-1 CLO Ltd.
as a Lender
By: THL Credit Senior Loan Strategies LLC, as
Investment Manager

BY: /s/ James R. Fellows
Name: James R. Fellows
Title: Managing Director/Co-Head

If a second signatory is needed:

By:
Name:
Title:

THL CREDIT WIND RIVER 2013-1 CLO LTD.
as a Lender
BY: THL Credit Senior Loan Strategies LLC, as
Investment Manager

By: /s/ James R. Fellows
Name: James R. Fellows
Title: Managing Director/Co-Head

If a second signatory is needed:

By:
Name:
Title:

THL Credit Wind River 2014-3 CLO Ltd.
as a Lender
By: THL Credit Senior Loan
Strategies LLC, as Manager

By: /s/ James R. Fellows
Name: James R. Fellows
Title: Managing Director/Co-Head

If a second signatory is needed:

By:
Name:
Title:

THL Credit Wind River 2015-1 CLO Ltd.
as a Lender
By: THL Credit Senior Loan
Strategies LLC, as Manager

By: /s/ James R. Fellows
Name: James R. Fellows
Title: Managing Director/Co-Head

If a second signatory is needed:

By:
Name:
Title:

THL Credit Wind River 2015-2 CLO Ltd.
as a Lender
By: THL Credit Senior Loan
Strategies LLC, as Manager

By: /s/ James R. Fellows
Name: James R. Fellows
Title: Managing Director/Co-Head

If a second signatory is needed:

By:
Name:
Title:

THL Credit Wind River 2016-1 CLO Ltd.
as a Lender
By: THL Credit Senior Loan
Strategies LLC, as Manager

By: /s/ James R. Fellows
Name: James R. Fellows
Title: Managing Director/Co-Head

If a second signatory is needed:

By:
Name:
Title:

THL Credit Wind River 2016-2 CLO Ltd.
as a Lender
By: THL Credit Advisors LLC, its Warehouse Collateral Manager

By: /s/ James R. Fellows
Name: James R. Fellows
Title: Managing Director/Co-Head

If a second signatory is needed:

By:
Name:
Title:

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THL Credit Wind River 2017-1 CLO Ltd.
as a Lender
By: THL Credit Advisors LLC, its Warehouse Collateral Manager

By: /s/ James R. Fellows
Name: James R. Fellows
Title: Managing Director/Co-Head

If a second signatory is needed:

By:
Name:
Title:

THL Credit Wind River 2017-2 CLO Ltd.
as a Lender
By: THL Credit Advisors LLC, its Asset Manager

By: /s/ James R. Fellows
Name: James R. Fellows
Title: Managing Director/Co-Head

If a second signatory is needed:

By:
Name:
Title:

THL Credit Wind River 2017-3 CLO Ltd.
as a Lender
By: THL Credit Advisors LLC, its Warehouse Collateral Manager

By: /s/ James R. Fellows
Name: James R. Fellows
Title: Managing Director/Co-Head

If a second signatory is needed:

By:
Name:
Title:

THL CREDIT WIND RIVER 2017-4 CLO LTD
as a Lender
By: THL Credit Advisors LLC, as Warehouse Collateral Manager

By: /s/ James R. Fellows
Name: James R. Fellows
Title: Managing Director/Co-Head

If a second signatory is needed:

By:
Name:
Title:

ICM Global Floating Rate Income Limited
as a Lender
By: Investcorp Credit Management US LLC, as the US Investment Manager

By: /s/ David Nadeau
Name: David Nadeau
Title: Portfolio Manager

If a second signatory is needed:

By:
Name:
Title:

ICM Senior Loan Fund, L.P.
as a Lender
By: Investcorp Credit Management US LLC, as Portfolio Manager

By: /s/ David Nadeau
Name: David Nadeau
Title: Portfolio Manager

If a second signatory is needed:

By:
Name:
Title:

Jamestown CLO IX Ltd.
as a Lender
By: 3i Debt Management U.S. LLC, as Portfolio Manager

By: /s/ David Nadeau
Name: David Nadeau
Title: Portfolio Manager

If a second signatory is needed:

By:
Name:
Title:

Jamestown CLO III Ltd.
as a Lender
By: 3i Debt Management U.S. LLC, as Portfolio Manager

By: /s/ David Nadeau
Name: David Nadeau
Title: Portfolio Manager

If a second signatory is needed:

By:
Name:
Title:

Jamestown CLO X Ltd.
as a Lender
By: 3i Debt Management U.S. LLC, as Portfolio Manager

By: /s/ David Nadeau
Name: David Nadeau
Title: Partner

If a second signatory is needed:

By:
Name:
Title:

Jamestown CLO VI-R Ltd.
as a Lender
By: Investcorp Credit Management US LLC, as Portfolio Manager

By: /s/ David Nadeau
Name: David Nadeau
Title: Portfolio Manager

If a second signatory is needed:

By:
Name:
Title:

Jamestown CLO IV Ltd.
as a Lender
By: 3i Debt Management U.S. LLC, as Portfolio Manager

By: /s/ David Nadeau
Name: David Nadeau
Title: Portfolio Manager

If a second signatory is needed:

By:
Name:
Title:

Jamestown CLO V Ltd.
as a Lender

By: /s/ David Nadeau
Name: David Nadeau
Title: Portfolio Manager

If a second signatory is needed:

By:
Name:
Title:

Jamestown CLO VIII Ltd.
as a Lender
By: 3i Debt Management U.S. LLC, as Portfolio Manager

By: /s/ David Nadeau
Name: David Nadeau
Title: Portfolio Manager

If a second signatory is needed:

By:
Name:
Title:

Jamestown CLO VII Ltd.
as a Lender
3i Debt Management U.S. LLC, as Portfolio Manager

By: /s/ David Nadeau
Name: David Nadeau
Title: Portfolio Manager

If a second signatory is needed:

By:
Name:
Title:

KVK CLO 2013-1, Ltd
as a Lender

By: /s/ William Harned
Name: William Harned
Title: Assistant Vice President

If a second signatory is needed:

By:
Name:
Title:

KVK CLO 2014-2, Ltd
as a Lender

By: /s/ William Harned
Name: William Harned
Title: Assistant Vice President

If a second signatory is needed:

By:
Name:
Title:

KVK CLO 2014-3, Ltd
as a Lender

By: /s/ William Harned
Name: William Harned
Title: Assistant Vice President

If a second signatory is needed:

By:
Name:
Title:

KVK CLO 2016-1, Ltd
as a Lender

By: /s/ William Harned
Name: William Harned
Title: Assistant Vice President

If a second signatory is needed:

By:
Name:
Title:

KVK CLO 2018-1, Ltd
as a Lender

By: /s/ William Harned
Name: William Harned
Title: Assistant Vice President

If a second signatory is needed:

By:
Name:
Title:

Exhibit 10.4

SIXTH AMENDMENT TO THE CREDIT AGREEMENT

This Sixth Amendment to the Credit Agreement ("**Amendment**") is dated as of July 31st, 2018, between by and among GREEN PLAINS CATTLE COMPANY LLC (the "**Borrower**"), the commercial, banking or financial institutions whose signatures appear on the signature pages hereof or which hereafter become parties to the Credit Agreement (as defined below) (and such commercial, banking or financial institutions are sometimes referred to hereinafter collectively as the "**Lenders**" and individually as a "**Lender**"), and BANK OF THE WEST and ING CAPITAL, LLC, as "**Joint Administrative Agent**"). Borrower, Lenders, and the Joint Administrative Agent agree as follows:

PRELIMINARY STATEMENT. Borrower, Lenders, and the Joint Administrative Agent entered into that certain Credit Agreement dated as of December 3, 2014 (that credit agreement as amended herein and by any and all other modifications or amendments thereto is hereinafter referred to as the "**Credit Agreement**"; the terms defined in the Credit Agreement are used herein as therein defined). Borrower, Lenders, and the Joint Administrative Agent wish to amend certain provisions of the Credit Agreement.

NOW, THEREFORE, the parties hereto agree as follows:

Section 1.01 **Amendment to Schedules**. Schedule 1.01(b) of the Credit Agreement is hereby added to the Credit Agreement, as attached hereto.

Section 1.02 **Amendment to Section 2.16 of the Credit Agreement**. Section 2.16 of the Credit Agreement is hereby amended and restated as follows:

2.16 Increase in Revolving Facility.

(a) Request for Increase. Provided there exists no Default, upon notice to the Joint Administrative Agent (which shall promptly notify the Revolving Lenders), the Borrower may from time to time, request an increase in the Revolving Facility (for all such requests) not exceeding $100,000,000 (an "**Incremental Facility**"); provided that (i) any such request for an Incremental Facility shall be in a minimum amount of $10,000,000 plus additional increments in the amount of $5,000,000, and (ii) the Borrower may make a maximum of three (3) such requests. At the time of sending such notice, the Borrower (in consultation with the Joint Administrative Agent) shall specify the time period within which each Revolving Lender is requested to respond which shall in no event be less than ten (10) Business Days from the date of delivery of such notice to the Revolving Lenders.

(b) Lender Elections to Increase. Each Revolving Lender shall notify the Joint Administrative Agent within such time period whether or not in its sole discretion it agrees to increase its Revolving Commitment and, if so, whether by an amount equal to, greater than, or less than its Applicable Revolving Percentage of such requested increase. Any Revolving Lender not responding within such time period shall be deemed to have declined to increase its Revolving Commitment.

(c) Notification by Joint Administrative Agent; Additional Revolving Lenders. The Joint Administrative Agent shall notify the Borrower and each Revolving Lender of the Revolving Lenders' responses to each request made hereunder. To achieve the full amount of a requested increase, and subject to the approval of the Joint Administrative Agent, the L/C Issuer and the Swingline Lender, the Borrower may also invite additional Eligible Assignees to become Revolving Lenders pursuant to a joinder agreement ("**New Revolving Lenders**") in form and substance satisfactory to the Joint Administrative Agent and its counsel.

(d) Effective Date and Allocations. If the Revolving Facility is increased in accordance with this Section, the Joint Administrative Agent and the Borrower shall determine the effective date (the "**Revolving Increase Effective Date**") and the final allocation of such increase. The Joint Administrative Agent shall promptly notify the Borrower and the Revolving Lenders and the New Revolving Lenders of the final allocation of such increase and the Revolving Increase Effective Date.

(e) Conditions to Effectiveness of Increase. As a condition precedent to such increase, the Borrower shall deliver to the Joint Administrative Agent a certificate of the Borrower dated as of the Revolving Increase Effective Date (in sufficient copies for each Lender) signed by a Responsible Officer the Borrower (i) certifying and attaching the resolutions adopted by the Borrower approving or consenting to such increase, and (ii) in the case of the Borrower, certifying that, before and after giving effect to such increase, (A) the representations and warranties contained in Article V and the other Loan Documents are true and correct, on and as of the Revolving Increase Effective Date, and except that for purposes of this Section, the representations and warranties contained in subsections (a) and (b) of Section 5.05 shall be deemed to refer to the most recent statements furnished pursuant to clauses (a) and (b), respectively, of Section 6.01, and (B) both before and after giving effect to the Incremental Facility, no Default exists. The Borrower shall deliver or cause to be delivered any other customary documents, including, without limitation, legal opinions) as reasonably requested by the Joint Administrative Agent in connection with any Incremental Facility. The Borrower shall prepay any Revolving Loans outstanding on the Revolving Increase Effective Date (and pay any additional amounts required pursuant to Section 3.05) to the extent necessary to keep the outstanding Revolving Loans ratable with any revised Applicable Revolving Percentages arising from any nonratable increase in the Revolving Commitments under this Section.

(f) Conflicting Provisions. This Section shall supersede any provisions in Section 2.13 or 11.01 to the contrary.

(g) Incremental Facility. Except as otherwise specifically set forth herein, all of the other terms and conditions applicable to such Incremental Facility shall be identical to the terms and conditions applicable to the Revolving Facility.

Amendment to Section 3.03(b) of the Credit Agreement. Section 3.03(b) of the Credit Agreement is hereby amended and restated as follows:

(b) Notwithstanding the foregoing, if the Joint Administrative Agent has made the determination described in clause (a)(i) of this Section, the Joint Administrative Agent in consultation with the Borrower and the Required Lenders, may establish an alternative interest rate (which rate shall not be less than zero) for the Impacted Loans, in which case, such alternative rate of interest shall apply with respect to the Impacted Loans until (1) the Joint Administrative Agent revokes the notice delivered with respect to the Impacted Loans under clause (a)(i) of this Section, (2) the Joint Administrative Agent or the Required Lenders notify the Joint Administrative Agent and the Borrower that such alternative interest rate does not adequately and fairly reflect the cost to [the] Lenders of funding the Impacted Loans, or (3) any Lender determines that any Law has made it unlawful, or that any Governmental Authority has asserted that it is unlawful, for such Lender or its applicable Lending Office to make, maintain or fund Loans whose interest is determined by reference to such alternative rate of interest or to determine or charge interest rates based upon such rate or any Governmental Authority has imposed material restrictions on the authority of such Lender to do any of the foregoing and provides the Joint Administrative Agent and the Borrower written notice thereof.

Section 1.04 **Representations and Warranties of Borrower** .

(a) Borrower is duly organized, validly existing and in good standing under the laws of the State of its formation.

(b) The execution, delivery and performance by Borrower of this Amendment, any Notes and the Credit Agreement, as amended hereby, are within Borrower's powers, have been duly authorized by all necessary action, if necessary, and do not contravene Borrower's operating agreement, or any law or any contractual restriction binding on or affecting Borrower , as applicable, or result in, or require, the creation of any lien, security interest or other charge or encumbrance upon or with respect to any of the properties.

(c) No authorization, approval or other action by, and no notice to or filing with, any governmental authority or regulatory body is required for the due execution, delivery and performance by Borrower of this Amendment, any Notes and the Credit Agreement, as amended hereby.

(d) This Amendment, the Credit Agreement, as amended hereby, and any Notes constitute, legal, valid and binding obligations of Borrower enforceable against Borrower in accordance with their respective terms.

(e) No event listed in Section 8.01 of the Credit Agreement has occurred and is continuing.

Section 1.05 **Effectiveness**. This Amendment shall become effective when the Joint Administrative Agent has received (a) counterparts of this Amendment duly executed by the Borrower and the Lenders; (b) an opinion of counsel for the Borrower, as to such matters as reasonably requested by the Joint Administrative Agent (c) a borrowing resolution and incumbency certificate (d) as applicable notes or amended and restated notes the (Notes) and (e) such other documents, actions or assurances as Lenders or the Joint Administrative Agent may reasonably request.

Section 1.06 **Reference to and Effect on the Credit Agreement**. Upon the effectiveness of Section 1.05 hereof:

(a) On and after the date hereof, each reference in the Credit Agreement to "this Agreement", "hereunder" "hereof", "herein" or words of like import shall mean and be a reference to the Credit Agreement as amended hereby.

(b) Except as specifically amended by any prior amendments, the Credit Agreement shall remain in full force and effect and is hereby ratified and confirmed.

(c) The execution, delivery and effectiveness of this Amendment shall not, except as expressly provided herein, operate as a waiver of any right, power or remedy of Lender under the Credit Agreement, nor constitute a waiver of any provision of the Credit Agreement.

Section 1.07 **Execution in Counterparts**. This Amendment may be executed in any number of counterparts, each of which when so executed and delivered shall be deemed to be an original and all of which taken together shall constitute but one and the same instrument.

Section 1.08 **Governing Law**. This Amendment shall be governed by, and construed in accordance with, the laws (without giving effect to the conflicts of laws principles thereof) of the State of Nebraska.

Section 1.09 **Expenses**. The Borrower shall pay on demand all costs and expenses incurred by Lenders in connection with the preparation, execution, delivery, filing, and administration of this Amendment (including, without limitation, Attorneys' Costs incurred in connection with the preparation of this Amendment and advising Lender as to its rights, and the cost of any credit verification reports or field examinations of the Borrower ' properties or books and records). The Borrower's obligations to Lenders under this Section 1.09 shall survive termination of this Amendment and repayment of the Borrower's Obligations to Lenders under the Credit Agreement.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be executed by their respective officers thereunto duly authorized, as of the date first above written.

GREEN PLAINS CATTLE COMPANY LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

BANK OF THE WEST, as Joint Administrative Agent

By:	/s/ Daryl R. Krause
Name:	Daryl R. Krause
Title:	Managing Director

BANK OF THE WEST, as Swingline Lender, and Lender

By:	/s/ Brock Thorbeg
Name:	Brock Thorbeg
Title:	Director

ING CAPITAL LLC, as Joint Administrative Agent,
L/C Issuer, and Lender

By:	/s/ Daniel Lamprecht
Name:	Daniel Lamprecht
Title:	Managing Director

and

By:	/s/ Pamela Beal
Name:	Pamela Beal
Title:	Vice President

RABO AGRIFINANCE LLC, Lender

By:	/s/ Deborah Asberry-Chua
Name:	Deborah Asberry-Chua
Title:	Vice President

FARM CREDIT SERVICES OF AMERICA, PCA, Lender

By:	/s/ Judson J. Jesske
Name:	Judson J. Jesske
Title:	Vice President

FCS COMMERCIAL FINANCE GROUP, for AGCOUNTRY FARM CREDIT SERVICES, PCA, Lender

By:	/s/ Warren Shoen
Name:	Warren Shoen
Title:	Senior Vice President

BANK OF AMERICA, N.A., Lender

By:	/s/ Brittany Bellinghausen
Name:	Brittany Bellinghausen
Title:	Assistant Vice President

AMERICAN AGCREDIT, PCA, Lender

By:	/s/ Kyle Lucas
Name:	Kyle Lucas
Title:	VP - Relationship Manager

INTRUST BANK, N.A., Lender

By:	/s/ Ryan Reh
Name:	Ryan Reh
Title:	Commercial Relationship Manager

AG COUNTRY FARM CREDIT SERVICES, FLCA, Lender

By: /s/ Nicole Schwartz
Name: Nicole Schwartz
Title: Vice President

FARM CREDIT MID-AMERICA, PCA, Lender

By:	/s/ Steven L. Moore
Name:	Steven L. Moore
Title:	Vice President

GREENSTONE FARM CREDIT SERVICES, ACA, Lender

By:	/s/ Shane Prichard
Name:	Shane Prichard
Title:	AVP of Capital Markets

GUARANTOR ACKNOWLEDGEMENT

The undersigned hereby consent to this Amendment and further acknowledge and agree that their respective Guaranty remains in full force and effect.

GREEN PLAINS INC.

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS I LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS II LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

FLEISCHMANN'S VINEGAR COMPANY, INC.

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS AGRICULTURAL AND ENERGY FUND LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS ASSET MANAGEMENT LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS GRAIN COMPANY TN LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS INDUSTRIAL CLEANING SERVICES LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS TRUCKING LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS HEREFORD LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS HOPEWELL LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS MADISON LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS MOUNT VERNON LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS YORK LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS PROCESSING LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS ATKINSON LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS BLUFFTON LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS CENTRAL CITY LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS COMMODITIES LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS CORN OIL LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS FAIRMONT LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS HOLDINGS II LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS OBION LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS ORD LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS OTTER TAIL LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS SHENANDOAH LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS SUPERIOR LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

GREEN PLAINS WOOD RIVER LLC

By: /s/ Phil Boggs
Name: Phil Boggs
Title: Vice President, Finance & Treasurer

<u>SCHEDULE 1.01(b)</u>

Initial Commitments and Applicable Percentages

Institution	Final Allocations	Pro Rata Share
Bank of the West	$94,000,000.00	18.800000000%
ING Capital LLC	$94,000,000.00	18.800000000%
Farm Credit Services of America	$65,000,000.00	13.000000000%
Rabo AgriFinance, LLC	$62,500,000.00	12.500000000%
Farm Credit Mid-America PCA	$42,500,000.00	8.500000000%
United FCS, PCA, d/b/a FCS Commercial Finance Group	$42,500,000.00	8.500000000%
American AgCredit, PCA	$30,000,000.00	6.000000000%
Bank of America, N.A.	$23,500,000.00	4.700000000%
GreenStone Farm Credit Services, ACA	$17,500,000.00	3.500000000%
InTrust Bank, N.A.	$15,000,000.00	3.000000000%
Ag Country Farm Credit Services, FLCA	$13,500,000.00	2.700000000%
Total	$500,000,000.00	100.00000000%

Exhibit 31.1

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: August 2, 2018

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

Exhibit 31.2

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

I, John W. Neppl, 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: August 2, 2018

/s/ John W. Neppl
John W. Neppl
Chief Financial Officer
(Principal Financial Officer)

Exhibit 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

In connection with the Quarterly Report of Green Plains Inc. (the "company") on Form 10-Q for the fiscal quarter ended June 30, 2018 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: August 2, 2018

/s/ Todd A. Becker

Todd A. Becker

President and Chief Executive Officer

Exhibit 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**

In connection with the Quarterly Report of Green Plains Inc. (the "company") on Form 10-Q for the fiscal quarter ended June 30, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, John W. Neppl, 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: August 2, 2018

/s/ John W. Neppl
John W. Neppl
Chief Financial Officer