CF Industries Holdings, Inc.
Form 10-K
February 22, 2019
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549
FORM 10-K
(Mark One)

| | |
|---|---|
| ý | ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 |

For the fiscal year ended December 31, 2018
OR

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

Commission file number 001-32597
CF INDUSTRIES HOLDINGS, INC.
(Exact name of registrant as specified in its charter)

| | |
|---|---|
| Delaware | 20-2697511 |
| (State or other jurisdiction of incorporation or organization) | (I.R.S. Employer Identification No.) |
| 4 Parkway North, Suite 400, Deerfield, Illinois | 60015 |
| (Address of principal executive offices) | (Zip Code) |

Registrant's telephone number, including area code (847) 405-2400
Securities registered pursuant to Section 12(b) of the Act:

| Title of each class | Name of each exchange on which registered |
|---|---|
| common stock, par value $0.01 per share | New York Stock Exchange |

Securities registered pursuant to section 12(g) of the Act: None
Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ý No o
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes o No ý
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 ý No o
Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ý No o
Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. o
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 ý | Accelerated filer o | Non-accelerated filer o | Smaller reporting company o | Emerging growth company o |
|---|---|---|---|---|

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. o

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes o No ý

The aggregate market value of the registrant's common stock held by non-affiliates as of June 29, 2018 (the last business day of the registrant's most recently completed second fiscal quarter), computed by reference to the closing sale price of the registrant's common stock, was $10,318,413,880.

222,890,557 shares of the registrant's common stock, par value $0.01 per share, were outstanding as of January 31, 2019.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for its 2019 annual meeting of stockholders (Proxy Statement) are incorporated by reference into Part III of this Annual Report on Form 10-K. The Proxy Statement will be filed with the Securities and Exchange Commission, pursuant to Regulation 14A, not later than 120 days after the end of the 2018 fiscal year, or, if the registrant does not file the Proxy Statement within such 120-day period, the registrant will amend this Annual Report on Form 10-K to include the information required under Part III hereof not later than the end of such 120-day period.

CF INDUSTRIES HOLDINGS, INC.
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# PART I

## ITEM 1. BUSINESS.

### Our Company

All references to “CF Holdings,” “we,” “us,” “our” and “the Company,” refer to CF Industries Holdings, Inc. and its subsidiaries, except where the context makes clear that the reference is only to CF Industries Holdings, Inc. itself and not its subsidiaries. All references to “CF Industries” refer to CF Industries, Inc., a 100% owned subsidiary of CF Industries Holdings, Inc. Notes referenced throughout this document refer to consolidated financial statement note disclosures that are found in Item 8. Financial Statements and Supplementary Data—Notes to Consolidated Financial Statements.

We are a leading global fertilizer and chemical company. Our 3,000 employees operate world-class manufacturing complexes in Canada, the United Kingdom and the United States. Our principal nitrogen fertilizer products are ammonia, granular urea, urea ammonium nitrate solution (UAN) and ammonium nitrate (AN). Our other nitrogen products include diesel exhaust fluid (DEF), urea liquor, nitric acid and aqua ammonia, which are sold primarily to our industrial customers, and compound fertilizer products (NPKs), which are solid granular fertilizer products for which the nutrient content is a combination of nitrogen, phosphorus, and potassium. We serve our customers in North America through our production, storage, transportation and distribution network. We also reach a global customer base with exports from our Donaldsonville, Louisiana, plant, the world’s largest and most flexible nitrogen complex. Additionally, we move product to international destinations from our Verdigris, Oklahoma, facility, our Yazoo City, Mississippi, facility, and our Billingham and Ince facilities in the United Kingdom, and a joint venture ammonia facility in the Republic of Trinidad and Tobago in which we own a 50 percent interest.

Our principal assets include:

- five U.S. nitrogen fertilizer manufacturing facilities, located in Donaldsonville, Louisiana (the largest nitrogen fertilizer complex in the world); Port Neal, Iowa; Yazoo City, Mississippi; Verdigris, Oklahoma; and Woodward, Oklahoma. These facilities are owned directly or indirectly by CF Industries Nitrogen, LLC (CFN), of which we own approximately 89% and CHS Inc. (CHS) owns the remainder. See Note 17—Noncontrolling Interests for additional information on our strategic venture with CHS;
- two Canadian nitrogen fertilizer manufacturing facilities, located in Medicine Hat, Alberta (the largest nitrogen fertilizer complex in Canada) and Courtright, Ontario;
- two United Kingdom nitrogen manufacturing facilities, located in Billingham and Ince;
- an extensive system of terminals and associated transportation equipment located primarily in the Midwestern United States; and
- a 50% interest in Point Lisas Nitrogen Limited (PLNL), an ammonia production joint venture located in the Republic of Trinidad and Tobago that we account for under the equity method.

Our nitrogen fertilizer manufacturing facility in Verdigris, Oklahoma, is owned and operated by Terra Nitrogen, Limited Partnership (TNLP). Prior to April 2, 2018, TNLP was a subsidiary of Terra Nitrogen Company, L.P. (TNCLP), which was a publicly traded limited partnership of which we were the sole general partner and the majority limited partner, and in which we owned an approximate 75.3% interest.

In 2018, we announced that in accordance with the terms of TNCLP’s First Amended and Restated Agreement of Limited Partnership (as amended by Amendment No. 1 to the First Amended and Restated Agreement of Limited Partnership, the TNCLP Agreement of Limited Partnership), Terra Nitrogen GP Inc. (TNGP), the sole general partner of TNCLP and an indirect wholly owned subsidiary of CF Holdings, elected to exercise its right to purchase all of the 4,612,562 publicly traded common units of TNCLP (the TNCLP Public Units). TNGP completed its purchase of the TNCLP Public Units on April 2, 2018 (the Purchase), for an aggregate cash purchase price of $388 million. We funded the Purchase with cash on hand. Upon completion of the Purchase, CF Holdings owned, through its subsidiaries, 100 percent of the general and limited partnership interests of TNCLP.

In 2016, we completed our capacity expansion projects at Donaldsonville, Louisiana and Port Neal, Iowa. These projects, originally announced in 2012, included the construction of new ammonia, urea, and UAN plants at our Donaldsonville, Louisiana complex and new ammonia and urea plants at our Port Neal, Iowa complex. These plants increased our overall production capacity by approximately 25%, improved our product mix flexibility at Donaldsonville, and improved our ability to serve upper-Midwest urea customers from our Port Neal location. These new facilities allow us to benefit from the cost advantages of North American natural gas. At our Donaldsonville complex, the ammonia plant was placed in service in the fourth quarter of 2016, the UAN plant was placed in service in the first quarter of 2016 and the granular urea plant was placed in service in the fourth quarter of 2015. At our Port Neal, Iowa complex, both the ammonia and granular urea plants were placed in service in the fourth quarter of 2016. The total capital cost of the capacity expansion projects was $5.2 billion.

We commenced a strategic venture with CHS on February 1, 2016, at which time CHS made a capital contribution of $2.8 billion to CFN in exchange for membership interests in CFN, which represented approximately 11% of the total membership interests of CFN. We own the remaining membership interests. On February 1, 2016, CHS also began receiving deliveries pursuant to a supply agreement under which CHS has the right to purchase annually from CFN up to approximately 1.1 million tons of granular urea and 580,000 tons of UAN at market prices. As a result of its minority equity interest in CFN, CHS is entitled to semi-annual cash distributions from CFN. We are also entitled to semi-annual cash distributions from CFN. See Note 17—Noncontrolling Interests for additional information on our strategic venture with CHS.

On July 31, 2015, we acquired the remaining 50% equity interest in CF Fertilisers UK Group Limited (formerly known as GrowHow UK Group Limited) (CF Fertilisers UK) not previously owned by us for total consideration of $570 million, and CF Fertilisers UK became wholly owned by us. This transaction added CF Fertilisers UK’s nitrogen manufacturing complexes in Ince, United Kingdom and Billingham, United Kingdom to our consolidated manufacturing capacity.

For the years ended December 31, 2018, 2017 and 2016, we sold 19.3 million, 20.0 million and 17.0 million product tons generating net sales of $4.43 billion, $4.13 billion and $3.69 billion, respectively.

Our principal executive offices are located outside of Chicago, Illinois, at 4 Parkway North, Suite 400, Deerfield, Illinois 60015, and our telephone number is 847-405-2400. Our Internet website address is www.cfindustries.com. Information made available on our website does not constitute part of this Annual Report on Form 10-K.

We make available free of charge on or through our Internet website, www.cfindustries.com, all of our reports on Forms 10-K, 10-Q and 8-K and all amendments to those reports as soon as reasonably practicable after such material is filed electronically with, or furnished to, the Securities and Exchange Commission (SEC). Copies of our Corporate Governance Guidelines, Code of Corporate Conduct and charters for the Audit Committee, Compensation and Management Development Committee, and Corporate Governance and Nominating Committee of our Board of Directors (the Board) are also available on our Internet website. We will provide electronic or paper copies of these documents free of charge upon request. The SEC also maintains a website at www.sec.gov that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC.

## Company History

We were founded in 1946 as a fertilizer brokerage operation by a group of regional agricultural cooperatives. During the 1960s, we expanded our distribution capabilities and diversified into fertilizer manufacturing through the acquisition of several existing plants and facilities. During the 1970s and again during the 1990s, we expanded our production and distribution capabilities significantly, spending approximately $1 billion in each of these decades.

We operated as a traditional manufacturing and supply cooperative until 2002, when we adopted a new business model that established financial performance as our principal objective, rather than assured supply to our owners. A critical aspect of the new business model was to establish a more economically driven approach to the marketplace.

In August 2005, we completed our initial public offering (IPO) of common stock, which is listed on the New York Stock Exchange. In connection with the IPO, we consummated a reorganization transaction whereby we ceased to be a cooperative and our pre-IPO owners’ equity interests in CF Industries were canceled in exchange for all of the proceeds of the offering and shares of our common stock.

In April 2010, we acquired Terra Industries Inc. (Terra), a leading North American producer and marketer of nitrogen fertilizer products for a purchase price of $4.6 billion, which was paid in cash and shares of our common stock. As a result of the Terra acquisition, we acquired five nitrogen fertilizer manufacturing facilities, an approximately 75.3% interest in TNCLP and certain joint venture interests.

In March 2014, we completed the sale of our phosphate mining and manufacturing business, which was located in Florida, to Mosaic Inc. for approximately $1.4 billion in cash.

In July 2015, we acquired the remaining 50% equity interest in CF Fertilisers UK not previously owned by us for total consideration of $570 million, and CF Fertilisers UK became wholly owned by us.

In February 2016, our strategic venture with CHS commenced, at which time CHS made a capital contribution of $2.8 billion to CFN in exchange for membership interests in CFN, which represented approximately 11% of the total membership interests of CFN.

In 2016, we completed capacity expansion projects at Donaldsonville, Louisiana and Port Neal, Iowa which increased our production capacity by approximately 25% for a total capital cost of $5.2 billion.

In 2018, we announced that TNGP elected to exercise its right to purchase the TNCLP Public Units. TNGP completed the Purchase on April 2, 2018, for an aggregate cash purchase price of $388 million. Upon completion of the Purchase, CF Holdings owned, through its subsidiaries, 100 percent of the general and limited partnership interests of TNCLP.

## Product Tons and Nutrient Tons

Unless otherwise stated, we measure our production and sales volume in this Annual Report on Form 10-K in product tons, which represents the weight of the product measured in short tons (one short ton is equal to 2,000 pounds). References to UAN product tons assume a 32% nitrogen content basis for production volume.

We also provide certain supplementary volume information measured in nutrient tons. Nutrient tons represent the weight of the product's nitrogen content, which varies by product. Ammonia represents 82% nitrogen content, granular urea represents 46% nitrogen content, UAN represents between 28% and 32% nitrogen content and AN represents between 29% and 35% nitrogen content.

## Reportable Segments

Our reportable segments consist of the following segments: ammonia, granular urea, UAN, AN and Other. These segments are differentiated by products. We use gross margin to evaluate segment performance and allocate resources. Total other operating costs and expenses (consisting of selling, general and administrative expenses and other operating—net) and non-operating expenses (interest and income taxes), are centrally managed and are not included in the measurement of segment profitability reviewed by management. See Note 21—Segment Disclosures for additional information.

## Our Products

Our primary nitrogen fertilizer products are ammonia, granular urea, UAN and AN. Our historical sales of nitrogen fertilizer products are shown in the following table. Net sales do not reflect amounts used internally, such as ammonia, in the manufacture of other products.

| | 2018 | | 2017 | | 2016 | |
|---|---|---|---|---|---|---|
| | Sales Volume (tons) | Net Sales | Sales Volume (tons) | Net Sales | Sales Volume (tons) | Net Sales |
| | (tons in thousands; dollars in millions) | | | | | |
| Products | | | | | | |
| Ammonia | 3,135 | $1,028 | 4,105 | $1,209 | 2,874 | $981 |
| Granular urea | 4,898 | 1,322 | 4,357 | 971 | 3,597 | 831 |
| UAN | 7,042 | 1,234 | 7,093 | 1,134 | 6,681 | 1,196 |
| AN | 2,002 | 460 | 2,353 | 497 | 2,151 | 411 |
| Other[1] | 2,252 | 385 | 2,044 | 319 | 1,654 | 266 |
| Total | 19,329 | $4,429 | 19,952 | $4,130 | 16,957 | $3,685 |

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[1] Other segment products include DEF, urea liquor, nitric acid, aqua ammonia and NPKs.

Gross margin was $917 million, $434 million and $843 million for the years ended December 31, 2018, 2017 and 2016, respectively.

We own and operate seven nitrogen fertilizer manufacturing facilities in North America, including five nitrogen fertilizer manufacturing facilities in the United States, one in Medicine Hat, Alberta, Canada and one in Courtright, Ontario, Canada. As of December 31, 2018, the combined production capacity of these seven facilities represented approximately 41%, 42%, 44% and 19% of North American ammonia, granular urea, UAN and AN production capacity, respectively. Each of our nitrogen fertilizer manufacturing facilities in North America has on-site storage to provide flexibility to manage the flow of outbound shipments without impacting production. We also operate two United Kingdom nitrogen manufacturing facilities located in Billingham and Ince that produce ammonia, AN and NPKs and serve primarily the British agricultural and industrial markets.

The following table shows the production capacities as of December 31, 2018 at each of our nitrogen manufacturing facilities:

| | Average Annual Capacity[1] | | | | | |
|---|---|---|---|---|---|---|
| | Gross Ammonia[2] | Net Ammonia[2] | UAN[3] | Urea[4] | AN[5] | Other[6] |
| | (tons in thousands) | | | | | |
| Donaldsonville, Louisiana[7] | 4,335 | 1,390 | 3,255 | 2,635 | — | 445 |
| Medicine Hat, Alberta | 1,230 | 770 | — | 810 | — | — |
| Port Neal, Iowa | 1,230 | 110 | 800 | 1,350 | — | 110 |
| Verdigris, Oklahoma[8] | 1,210 | 430 | 1,955 | — | — | — |
| Woodward, Oklahoma | 480 | 130 | 810 | — | — | 115 |
| Yazoo City, Mississippi[8][9] | 570 | — | 160 | — | 1,035 | 125 |
| Courtright, Ontario[8][10] | 500 | 265 | 345 | — | — | 400 |
| Ince, U.K.[11] | 380 | 15 | — | — | 575 | 415 |
| Billingham, U.K.[8] | 595 | 230 | — | — | 625 | 410 |
| | 10,530 | 3,340 | 7,325 | 4,795 | 2,235 | 2,020 |
| Unconsolidated Affiliate | | | | | | |
| Point Lisas, Trinidad[12] | 360 | 360 | — | — | — | — |
| Total | 10,890 | 3,700 | 7,325 | 4,795 | 2,235 | 2,020 |

(1) Average annual capacity includes allowance for normal outages and planned maintenance shutdowns.

(2) Gross ammonia capacity includes ammonia used to produce upgraded products. Net ammonia capacity is gross ammonia capacity less ammonia used to produce upgraded products based on the product mix shown in the table.

(3) Measured in tons of UAN containing 32% nitrogen by weight.

(4) Reflects granular urea capacity from the Donaldsonville, Medicine Hat, and Port Neal facilities. Urea liquor and DEF production capacities are included in Other.

(5) AN includes prilled products (Amtrate and industrial-grade AN, or IGAN) and AN solution produced for sale.

(6) Includes product tons of: urea liquor and DEF from the Donaldsonville, Port Neal, Woodward, Yazoo City, and Courtright facilities; nitric acid from the Courtright, Yazoo City, Billingham, and Ince facilities; and NPKs from the Ince facility. Production of DEF can be increased by reducing urea and/or UAN production.

(7) The Donaldsonville facility capacities present an estimated production mix. This facility is capable of producing between 2.4 million and 3.3 million tons of granular urea and between 1.2 million and 4.3 million tons of UAN annually. The facility is also capable of producing up to 1.2 million product tons of 32.5% DEF.

(8) Reduction of UAN or AN production at the Yazoo City, Courtright, Verdigris and Billingham facilities can allow more merchant nitric acid to be made available for sale.

(9) The Yazoo City facility's production capacity depends on product mix. With the facility maximizing the production of AN products, 160,000 tons of UAN can be produced. UAN production can be increased to 450,000 tons by reducing the production of AN to 900,000 tons.

(10) Production of urea liquor and DEF at the Courtright facility can be increased by reducing UAN production.

(11) The Ince facility can increase production of NPKs and nitric acid by reducing AN production.

(12) Represents our 50% interest in the capacity of PLNL.

The following table summarizes our nitrogen fertilizer production volume for the last three years:

| December 31, | | |
|---|---|---|
| 2018 | 2017 | 2016 |

| | | | |
|---|---|---|---|
| | (tons in thousands) | | |
| Ammonia[1] | 9,805 | 10,295 | 8,307 |
| Granular urea | 4,837 | 4,451 | 3,368 |
| UAN (32%) | 6,903 | 6,914 | 6,698 |
| AN | 1,731 | 2,127 | 1,845 |

(1) Gross ammonia production, including amounts subsequently upgraded on-site into granular urea, UAN or AN.

Donaldsonville, Louisiana

The Donaldsonville nitrogen fertilizer complex is the world's largest nitrogen fertilizer production facility. It has six ammonia plants, five urea plants, four nitric acid plants, three UAN plants, and one DEF plant. The complex, which is located on the Mississippi River, includes deep-water docking facilities, access to an ammonia pipeline, and truck and railroad loading capabilities. The complex has on-site storage for 140,000 tons of ammonia, 201,000 tons of UAN (measured on a 32% nitrogen content basis) and 130,000 tons of granular urea.

As part of our capacity expansion projects, a new Donaldsonville urea plant became operational during the fourth quarter of 2015. A new UAN plant was placed in service in the first quarter of 2016, and a new ammonia plant was placed in service in the fourth quarter of 2016.

Medicine Hat, Alberta, Canada

Medicine Hat is the largest nitrogen fertilizer complex in Canada. It has two ammonia plants and one urea plant. The complex has on-site storage for 60,000 tons of ammonia and 60,000 tons of granular urea.

Port Neal, Iowa

The Port Neal facility is located approximately 12 miles south of Sioux City, Iowa on the Missouri River. The facility consists of two ammonia plants, three urea plants, two nitric acid plants and a UAN plant. The location has on-site storage for 85,000 tons of ammonia, 130,000 tons of granular urea, and 70,000 tons of 32% UAN.

As part of our capacity expansion projects, a new ammonia plant and a new urea plant were placed in service in the fourth quarter of 2016.

Verdigris, Oklahoma

The Verdigris facility is located northeast of Tulsa, Oklahoma, near the Verdigris River. It is the second largest UAN production facility in North America. The facility comprises two ammonia plants, two nitric acid plants, two UAN plants and a port terminal. We operate the plants and lease the port terminal from the Tulsa-Rogers County Port Authority. The complex has on-site storage for 60,000 tons of ammonia and 100,000 tons of 32% UAN.

Woodward, Oklahoma

The Woodward facility is located in rural northwest Oklahoma and consists of an ammonia plant, two nitric acid plants, two urea plants and two UAN plants. The facility has on-site storage for 36,000 tons of ammonia and 84,000 tons of 32% UAN.

Yazoo City, Mississippi

The Yazoo City facility is located in central Mississippi and includes one ammonia plant, four nitric acid plants, an AN plant, two urea plants, a UAN plant and a dinitrogen tetroxide production and storage facility. The site has on-site storage for 50,000 tons of ammonia, 48,000 tons of 32% UAN and 11,000 tons of AN and related products.

Courtright, Ontario, Canada

The Courtright facility is located south of Sarnia, Ontario near the St. Clair River. The facility consists of an ammonia plant, a UAN plant, a nitric acid plant and a urea plant. The location has on-site storage for 64,000 tons of ammonia, 10,400 tons of granular urea and 16,000 tons of 32% UAN.

Ince, United Kingdom

The Ince facility is located in northwestern England and consists of an ammonia plant, three nitric acid plants, an AN plant and three NPK plants. The location has on-site storage for 11,000 tons of ammonia, 95,000 tons of AN, and 40,000 tons of NPKs.

Billingham, United Kingdom

The Billingham facility, located in the Teesside chemical area in northeastern England, is geographically split among three primary locations: the main site, which contains an ammonia plant, three nitric acid plants and a carbon dioxide plant; the Portrack site, approximately two miles away, which contains an AN fertilizer plant; and the North Tees site, approximately seven miles away, which contains an ammonia storage area. These locations collectively have on-site storage for 40,000 tons of ammonia and 128,000 tons of AN.

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Point Lisas, Trinidad

The Point Lisas Nitrogen facility in the Republic of Trinidad and Tobago is owned jointly through a 50/50 venture with Koch Fertilizer LLC. This facility has the capacity to produce 720,000 tons of ammonia annually from natural gas supplied under a contract with The National Gas Company of Trinidad and Tobago Limited (NGC).

Nitrogen Fertilizer Raw Materials

Natural gas is the principal raw material and primary fuel source used in the ammonia production process at our nitrogen fertilizer manufacturing facilities. In 2018, natural gas accounted for approximately 40% of our total production costs for nitrogen fertilizer products. Our nitrogen fertilizer manufacturing facilities have access to abundant, competitively-priced natural gas through a reliable network of pipelines that are connected to major natural gas trading hubs near the facilities. Our facilities utilize the following natural gas hubs: Henry Hub in Louisiana; SONAT in Louisiana; TETCO ELA in Louisiana; ONEOK in Oklahoma; AECO in Alberta; Ventura in Iowa; Demarcation in Kansas; Welcome in Minnesota; Dawn in Ontario; Parkway in Ontario; and the National Balancing Point (NBP) in the United Kingdom.

In 2018, our nitrogen manufacturing facilities consumed, in the aggregate, approximately 347 million MMBtus of natural gas. We employ a combination of daily spot and term purchases from a variety of quality suppliers to maintain a reliable, competitively-priced supply of natural gas. We also use certain financial instruments to hedge natural gas prices. See Note 15—Derivative Financial Instruments for additional information about our natural gas hedging activities.

Nitrogen Fertilizer Distribution

The safe, efficient and economical distribution of nitrogen fertilizer products is critical for successful operations. Our nitrogen fertilizer production facilities have access to multiple transportation modes by which we ship fertilizer products to terminals, warehouses and customers. Each of our production facilities has a unique distribution pattern based on its production capacity and location.

Our North American nitrogen production facilities can ship products via truck and rail to customers and to our storage facilities in the U.S. and Canada, with access to our leased railcar fleet of approximately 5,000 tank and hopper cars, as well as railcars provided by rail carriers. Our United Kingdom nitrogen production facilities mainly ship products via truck.

The North American waterway system is also used extensively to ship products from our Donaldsonville, Verdigris and Yazoo City facilities. To ship ammonia and UAN, we employ a fleet of eleven tow boats and thirty-two river barges, which are primarily leased. We also utilize contract marine services to move urea fertilizer. We can also export nitrogen fertilizer products via seagoing vessels from our Donaldsonville, Yazoo City, Billingham and Ince manufacturing facilities.

Three of our nitrogen production facilities also have access to pipelines for the transportation of ammonia. The Donaldsonville facility is connected to the 2,000-mile long Nustar pipeline through which we have the ability to transport ammonia to ten terminals and shipping points in the midwestern U.S. corn belt. Our Verdigris and Port Neal facilities are connected to the 1,100-mile long Magellan ammonia pipeline that also serves the Midwestern United States. On January 31, 2019, Magellan Midstream Partners, L.P. announced its decision to discontinue commercial operations of the ammonia pipeline beginning in late 2019.

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CF INDUSTRIES HOLDINGS, INC.

Storage Facilities and Other Properties

As of December 31, 2018, we owned or leased space at 61 in-market storage terminals and warehouses located in a 22-state region of the United States, Canada and the United Kingdom. Including storage at our production facilities, we have an aggregate storage capacity for approximately 3.3 million tons of product. Our storage capabilities are summarized in the following table:

| | Ammonia | | Granular Urea | | UAN[1] | | AN | |
|---|---|---|---|---|---|---|---|---|
| | Number of Facilities | Capacity (000 Tons) | Number of Facilities | Capacity (000 Tons) | Number of Facilities | Capacity (000 Tons) | Number of Facilities | Capacity (000 Tons) |
| Plants | 9 | 546 | 4 | 330 | 6 | 519 | 3 | 234 |
| Terminal and Warehouse Locations | | | | | | | | |
| Owned | 22 | 780 | 1 | 200 | 8 | 214 | — | — |
| Leased[2] | 5 | 178 | 1 | 7 | 24 | 320 | — | — |
| Total In-Market | 27 | 958 | 2 | 207 | 32 | 534 | — | — |
| Total Storage Capacity | | 1,504 | | 537 | | 1,053 | | 234 |

(1) Capacity is expressed as the equivalent volume of UAN measured on a 32% nitrogen content basis.

(2) Our lease agreements are typically for periods of one to five years.

Customers

The principal customers for our nitrogen fertilizer and other nitrogen products are cooperatives, independent fertilizer distributors, traders, wholesalers, farmers and industrial users. CHS was our largest customer in 2018 and accounted for approximately 14% of our consolidated net sales. Sales are generated by our internal marketing and sales force.

Competition

Our markets are global and intensely competitive, based primarily on delivered price and, to a lesser extent, on customer service and product quality. During the peak demand periods, product availability and delivery time also play a role in the buying decisions of customers.

Our primary North American-based competitors include Nutrien Ltd. (formed in January 2018 by the merger of Agrium Inc. and Potash Corporation of Saskatchewan Inc.), Koch Fertilizer LLC and Iowa Fertilizer Company. In addition, Yara BASF started up a new North American nitrogen fertilizer production facility in April 2018. There is also significant competition from products sourced from other regions of the world, including some with lower natural gas or other feedstock costs. Because ammonia, urea and UAN are widely-traded fertilizer products and there are limited barriers to entry, we experience competition from foreign-sourced products continuously.

Our primary United Kingdom competition comes from imported products supplied by companies including Yara International, Origin Fertilisers, Ameropa, CHS and Helm. Urea and UAN are not produced in the United Kingdom, but along with AN are widely-traded fertilizer products with limited barriers to entry.

Seasonality

The fertilizer business is seasonal. The degree of seasonality of our business can change significantly from year to year due to weather conditions in the agricultural industry and other factors. The strongest demand for our products in North America occurs during the spring planting season, with a second period of strong demand following the fall harvest. In contrast, we and other fertilizer producers generally manufacture and distribute products throughout the year. As a result, we and/or our customers generally build inventories during the low demand periods of the year to ensure timely product availability during the peak sales seasons. Seasonality is greatest for ammonia due to the short application season and the limited ability of our customers and their customers to store significant quantities of this product. The seasonality of fertilizer demand generally results in our sales volumes and net sales being the highest during the spring and our working capital requirements being the highest just prior to the start of the spring planting season. Our quarterly financial results can vary significantly from one year to the next due to weather-related shifts in planting schedules and purchasing patterns.

## Environmental, Health and Safety

We are subject to numerous environmental, health and safety laws and regulations in the United States, Canada, the United Kingdom, the European Union and the Republic of Trinidad and Tobago, including laws and regulations relating to the generation and handling of hazardous substances and wastes; the cleanup of hazardous substance releases; the discharge of regulated substances to air or water; and the demolition of existing plant sites upon permanent closure. In the United States, these laws include the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Toxic Substances Control Act (TSCA) and various other federal, state, provincial, local and international statutes. Violations of environmental, health and safety laws can result in substantial penalties, court orders to install pollution-control equipment, civil and criminal sanctions, permit revocations and facility shutdowns. In addition, environmental, health and safety laws and regulations may impose joint and several liability, without regard to fault, for cleanup costs on potentially responsible parties who have released or disposed of hazardous substances into the environment. We may be subject to more stringent enforcement of existing or new environmental, health and safety laws in the future.

### Environmental, Health and Safety Expenditures

Our environmental, health and safety capital expenditures in 2018 totaled approximately $40 million. We estimate that we will have approximately $60 million of capital expenditures for environmental, health and safety in 2019. Environmental, health and safety laws and regulations are complex, change frequently and have tended to become more stringent over time. We expect that continued government and public emphasis on environmental issues will result in increased future expenditures for environmental controls at our operations. Such expenditures could have a material adverse effect on our business, financial condition, results of operations and cash flows. Additionally, future environmental, health and safety laws and regulations or reinterpretation of current laws and regulations may require us to make substantial expenditures. Our costs to comply with, or any liabilities under, these laws and regulations could have a material adverse effect on our business, financial condition, results of operations and cash flows.

### CERCLA/Remediation Matters

From time to time, we receive notices from governmental agencies or third parties alleging that we are a potentially responsible party at certain cleanup sites under CERCLA or other environmental cleanup laws. In 2011, we received a notice from the Idaho Department of Environmental Quality (IDEQ) that alleged that we were a potentially responsible party for the cleanup of a former phosphate mine we owned in the late 1950s and early 1960s located in Georgetown Canyon, Idaho. The current owner of the property and a former mining contractor received similar notices for the site. We and the current owner are currently conducting a remedial investigation/feasibility study of the site. In 2015, we and several other parties received a notice that the U.S. Department of Interior and other trustees intend to undertake a natural resource damage assessment for a group of former phosphate mines in southeast Idaho, including the former Georgetown Canyon mine. See Note 20—Contingencies for additional information on the CERCLA/Remediation matters.

### Regulation of Greenhouse Gases

We are subject to regulations in the United Kingdom, the European Union, Canada and the United States concerning greenhouse gas (GHG) emissions.

The United Kingdom is a party to the Kyoto Protocol. As a result of agreements reached during a conference in Durban, South Africa in 2011, the Kyoto Protocol will continue in force for a second commitment period, which will expire by 2020. On December 12, 2015, 195 countries adopted by consensus a new international agreement known as the Paris Agreement. The Paris Agreement is intended to provide a framework pursuant to which the parties to the agreement will attempt to hold the increase in global average temperatures to below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. The Paris Agreement, which has been accepted by the United States and ratified by Canada and the United Kingdom, went into effect in

November 2016. The Paris Agreement could result in more aggressive efforts to reduce GHG emissions in the jurisdictions in which we operate.

The United Kingdom has adopted GHG emissions regulations, including regulations to implement the European Union Greenhouse Gas Emission Trading System (EU ETS). Our U.K. manufacturing plants are required to report GHG emissions annually to the United Kingdom Environment Agency pursuant to their site Environmental Permits and Climate Change Agreement, which specify energy efficiency targets. Failure to meet efficiency targets may require these plants to purchase $CO_2$ emissions allowances. The steam boilers at each of our U.K. sites are also subject to the EU ETS. However, the continued applicability of the EU ETS in the United Kingdom is uncertain due to the potential exit of the United Kingdom from the European Union (Brexit).

Canada withdrew from further participation in the Kyoto Protocol in December 2011, but is a party to the Paris Agreement. In Canada, we are required to conduct an annual review of our operations with respect to compliance with Environment Canada's National Pollutant Release Inventory and Ontario's Mandatory Monitoring and Reporting Regulation and the GHG Reporting Regulation. In 2018, the federal Greenhouse Pollution Pricing Act came into effect, pursuant to which the Canadian Department of the Environment will implement the Output-Based Performance Standard (OBPS), which is intended to function as a backstop to provincial greenhouse gas emissions regulations. The Department of the Environment is currently proposing that the benchmark for nitrogen fertilizer plants be set at 90% of the average performance of Canadian fertilizer plants. In the provinces and territories where the OBPS will apply, a facility whose carbon emissions exceed this benchmark will be required to offset emissions by obtaining and retiring surplus emission credits, obtaining qualifying emissions offsets, or paying a fee of $20 per ton of excess carbon dioxide equivalent ($CO_2$e) for calendar year 2019, which fee will rise by $10 per ton for each year through 2022.

In January 2017, Ontario launched its own GHG cap and trade program and beginning January 1, 2018, Ontario's cap and trade program was linked with the cap and trade programs in Quebec and California. Our Courtright Nitrogen Complex was subject to the Ontario cap and trade program. However, the government elected in Ontario in June 2018 rescinded the cap and trade program. Because Ontario no longer has a GHG regulatory regime, the federal government will impose the OBPS in the province. The federal government intends to finalize the OBPS in the first half of 2019 and then retroactively apply it to January 2019 in impacted provinces. Ontario and Saskatchewan are challenging whether the federal government has jurisdiction to impose a federal carbon price on the provinces and territories.

In Alberta, the Specified Gas Emitters Regulation was implemented in 2007. This program required facilities emitting more than 100,000 tons of GHGs per year to reduce emissions by 12% over such facilities' 2007 levels. To meet this requirement, companies could reduce emissions, purchase/use offset credits, or contribute to a technology fund at an annual rate of $15 per ton of $CO_2$. Beginning in 2018, our Medicine Hat Nitrogen Complex became subject to the Carbon Competitiveness Incentive Regulation (CCIR). This regulation establishes product-specific benchmarks based on the most efficient GHG emitting facilities in a sector. A facility with emissions that exceed the applicable benchmark will be required to take action to reduce its GHG emissions intensity, purchase emissions offsets or performance credits, or make contributions to Alberta's climate fund. The federal government has determined that Alberta's CCIR meets its stringency requirements so that the federal OBPS will not apply in Alberta in 2019. However, the government of Alberta has not determined whether it will agree to increase the effective price of carbon beyond the current price of $30 per ton of excess $CO_2$e. This could result in regulated facilities in Alberta being subject to the OBPS beginning in 2021, when the effective price of carbon pursuant to the Greenhouse Pollution Pricing Act rises to $40 per ton of excess $CO_2$e.

The United States is not a party to the Kyoto Protocol, but is a party to the Paris Agreement. However, in June 2017, the United States announced its intention to withdraw from the Paris Agreement, subject to renegotiation of the Paris Agreement on terms more favorable to the United States. Under the terms of the Paris Agreement, the United States cannot formally provide notice of its withdrawal before November 2019, which would become effective one year after providing such notice. In the interim, it is unclear if the United States will comply with its commitments under the Paris Agreement. There has been no indication to date that the United States' announced withdrawal is causing other countries to also consider withdrawing from the Paris Agreement. In the United States, GHG regulation is evolving at state, regional and federal levels, although some of the more significant developments to date, including EPA's Clean Power Plan (which the current Administration has proposed to rescind), do not directly impose obligations on our facilities. The EPA has issued a mandatory GHG reporting rule that required all of our U.S. manufacturing facilities to commence monitoring GHG emissions beginning on January 1, 2010 and reporting the previous year's emissions annually starting in 2011. In addition, if we seek to modify or expand any of our major facilities and as a result, are required to obtain a Prevention of Significant Deterioration (PSD) construction permit applicable to such facilities, we could be subject to pollution control requirements applicable to GHGs in addition to requirements applicable to conventional air pollutants. Such requirements may result in increased costs or delays in completing such projects. Other than the states' implementation of this permitting requirement, none of the states where our U.S. production facilities are located-Iowa, Louisiana, Mississippi and Oklahoma-has proposed control regulations limiting GHG emissions.

New Source Performance Standards for Nitric Acid Plants

We operate 14 nitric acid plants in the United States. On August 14, 2012, the EPA issued a final regulation revising air emission standards applicable to newly constructed, reconstructed or modified nitric acid plants. The regulations will apply to these plants if and when we undertake activities or operations that are considered modifications, including physical changes that would allow us to increase our production capacity at these plants. The regulations include certain provisions that could make it difficult for us to meet the limits on emissions of nitrogen oxides (NOx) notwithstanding pollution controls we may add to our plants, and accordingly, the regulations could impact our ability to expand production at our existing plants. The EPA regulation did not include a limitation on emissions of nitrous oxide (a greenhouse gas).

## Regulatory Permits and Approvals

We hold numerous environmental and other governmental permits and approvals authorizing operations at each of our facilities. A decision by a government agency to deny or delay issuing a new or renewed regulatory material permit or approval, or to revoke or substantially modify an existing material permit or approval, could have a material adverse effect on our ability to continue operations at the affected facility. Any future expansion of our existing operations is also predicated upon securing the necessary environmental or other permits or approvals. More stringent environmental standards may impact our ability to obtain such permits.

## Employees

As of December 31, 2018, we employed approximately 2,900 full-time and 100 part-time employees.

ITEM 1A. RISK FACTORS.

In addition to the other information contained in this Annual Report on Form 10-K, you should carefully consider the factors discussed below before deciding to invest in any of our securities. These risks and uncertainties could materially and adversely affect our business, financial condition, results of operations and cash flows.

Our business is cyclical, resulting in periods of industry oversupply during which our financial condition, results of operations and cash flows tend to be negatively affected.

Historically, selling prices for our products have fluctuated in response to periodic changes in supply and demand conditions. Demand for nitrogen is affected by planted acreage, crop selection and fertilizer application rates, driven by population growth or changes in dietary habits and non-food use of crops, such as production of ethanol and other biofuels among other things. Demand also includes industrial uses of nitrogen, for example chemicals manufacturing and emissions reductants such as diesel exhaust fluid (DEF). Supply is affected by available capacity and operating rates, raw material costs and availability, government policies and global trade.

Periods of strong demand, high capacity utilization and increasing operating margins tend to stimulate global investment in production capacity. Fertilizer producers, including CF Holdings, have built new production facilities or expanded capacity of existing production assets, or announced plans to do so. The construction of new nitrogen fertilizer manufacturing capacity in the industry, plus improvements to increase output from the existing production assets, increase nitrogen supply availability and affect the balance of supply and demand. In recent years, global nitrogen fertilizer capacity has increased faster than global nitrogen fertilizer demand, creating a surplus of global nitrogen fertilizer capacity leading to lower nitrogen fertilizer selling prices. For example, in the two-year period ended December 31, 2017, additional production capacity came on line and, at the same time, the average selling price for our products declined 34%, from $314 per ton in 2015 to $207 per ton in 2017.

Additional production capacity is expected to come on line over the next 12 months, primarily outside of North America. We cannot predict the impact of this additional capacity. Also, global or local economic and financial conditions or changes in such conditions, or other factors may cause acceleration of other announced and/or ongoing projects.

Price fluctuations for our products result from changes in supply and demand. Significant price fluctuations we experience could be symptoms of an oversupplied market in transition as new capacity ramps up, and production slows down or shuts down in high cost regions. Additionally, trade flows adjust as imports into different regions of the world also impact the local supply and demand balances. If imports increase into an oversupplied region, lower prices in that region could result.

During periods of industry oversupply, our financial condition, results of operations and cash flows tend to be affected negatively as the price at which we sell our products typically declines, resulting in possible reduced profit margins, write-downs in the value of our inventory and temporary or permanent curtailments of production. In recent years, our financial performance, credit ratings and the trading price for our common stock were negatively impacted by the lower selling prices resulting from the global oversupply of nitrogen fertilizer. While the average selling price for our products has increased 11% in 2018 to $229 per ton compared to $207 per ton in 2017, the period of time that these oversupply conditions will persist and the degree to which they will impact our business, financial condition, results of operations and cash flows is uncertain.

Our products are global commodities, and we face intense global competition from other fertilizer producers.

We are subject to intense price competition from our competitors. Most fertilizers are global commodities, with little or no product differentiation, and customers make their purchasing decisions principally on the basis of delivered price and to a lesser extent on customer service and product quality. As a consequence, conditions in the international market for nitrogen products significantly influence our operating results.

We compete with many producers, including state-owned and government-subsidized entities. Consolidation in the industry may increase the resources of several of our competitors. For example, in January 2018, our competitors

Agrium Inc. and Potash Corporation of Saskatchewan Inc. completed their merger into the newly formed company Nutrien Ltd. Some of our competitors have greater total resources and are less dependent on earnings from fertilizer sales, which make them less vulnerable to industry downturns and better positioned to pursue new expansion and development opportunities. Furthermore, certain governments as owners of some of our competitors may be willing to accept lower prices and profitability on their products in order to support domestic employment or other political or social goals. Our competitive position could suffer to the extent we are not able to expand our own resources, either through investments in new or existing operations or through acquisitions, joint ventures or partnerships.

China, the world’s largest producer and consumer of nitrogen fertilizers, currently has significant capacity surplus and many high-cost plants. As a result, the domestic nitrogen industry in China is operating at less than full capacity. If Chinese government policy, devaluation of the Chinese renminbi or decreases in Chinese producers' underlying costs such as the price of Chinese coal encourage increased production capacity utilization, any resulting export volume could adversely affect the balance between global supply and demand and may put downward pressure on global fertilizer prices, which could materially adversely affect our business, financial condition, results of operations and cash flows.

Our competitors in Russia continue to benefit from non-market pricing of natural gas, allowing continued exports from the region, and have significant nitrogen fertilizer export capacity. The 2016 revocations of U.S. antidumping measures on solid urea and fertilizer grade ammonium nitrate from Russia has allowed for increases in imports from that country in recent years.

We also face competition from other fertilizer producers in the Middle East, Europe, Latin America and Africa, who, depending on market conditions, fluctuating input prices, geographic location and freight economics, may take actions at times with respect to price or selling volumes that adversely affect our business, financial condition, results of operations and cash flows.

In addition, the international market for nitrogen products is influenced by such factors as currency exchange rates, including the relative value of the U.S. dollar and its impact upon the cost of importing of nitrogen products into the United States, foreign agricultural policies, the existence of, or changes in, import or foreign currency exchange barriers in certain foreign markets and the laws and policies of the markets in which we operate, including the imposition of new duties, tariffs or quotas, that affect foreign trade and investment. For example, the European Union is currently conducting an antidumping inquiry of UAN producers in the United States, Trinidad and Tobago and Russia. The result of this inquiry, and its impact, if any, on the international market for nitrogen products, is uncertain. In addition, it is uncertain as to whether additional inquiries or other actions in the international market for nitrogen fertilizer, if any, would have an adverse impact on the international market for our products.

A decline in agricultural production or limitations on the use of our products for agricultural purposes could materially adversely affect the demand for our products.

Conditions in the United States, Europe and other global agricultural areas significantly impact our operating results. Agricultural planted areas and production can be affected by a number of factors, including weather patterns and field conditions, current and projected grain inventories and prices, demand for agricultural products and governmental policies regarding production of or trade in agricultural products. These factors are outside of our control.

Governmental policies, including farm and biofuel subsidies, commodity support programs and tariffs, as well as the prices of fertilizer products, may also directly or indirectly influence the number of acres planted, the mix of crops planted and the use of fertilizers for particular agricultural applications. Ethanol production in the United States contributes significantly to corn demand, due in part to federal legislation mandating use of renewable fuels. An increase in ethanol production has led to an increase in the amount of corn grown in the United States and to increased fertilizer usage on both corn and other crops that have also benefited from improved farm economics. While the current Renewable Fuel Standard (RFS) encourages continued high levels of corn-based ethanol production, a continuing "food versus fuel" debate and other factors have resulted in calls to eliminate or reduce the renewable fuel mandate, or to eliminate or reduce corn-based ethanol as part of the renewable fuel mandate. This could have an adverse effect on corn-based ethanol production, planted corn acreage and fertilizer demand.

Developments in crop technology, such as nitrogen fixation, the conversion of atmospheric nitrogen into compounds that plants can assimilate, or nitrogen-efficient varieties, or developments in alternatives to traditional animal feed or alternative proteins, could also reduce the use of chemical fertilizers and adversely affect the demand for our products. Widespread adoption of emerging application technologies or alternative farming techniques could disrupt traditional application practices, affecting the volume or types of products used and timing of applications. In addition, from time to time various state legislatures have considered limitations on the use and application of chemical fertilizers due to concerns about the impact of these products on the environment. Any reduction in the demand for chemical fertilizer products, including as a result of technological developments and/or limitations on the use and application of chemical fertilizers, could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our business is dependent on natural gas, the prices of which are subject to volatility.

Natural gas is the principal raw material used to produce nitrogen fertilizers. We use natural gas both as a chemical feedstock and as a fuel to produce ammonia, granular urea, urea ammonium nitrate solution (UAN), ammonium nitrate (AN) and other nitrogen products.

Because most of our nitrogen fertilizer manufacturing facilities are located in the United States and Canada, North American natural gas comprises a significant portion of the total production cost of our products. The price of natural gas in North America has been volatile in recent years. During 2018, the daily closing price at the Henry Hub, the most heavily-traded natural gas pricing point in North America, reached a low of $2.48 per MMBtu on four consecutive days in February 2018 and a high of $6.88 per MMBtu on January 4, 2018. During the three-year period ended December 31, 2018, the daily closing price at the Henry Hub reached a low of $1.49 per MMBtu on three consecutive days in March 2016 and a high of $6.88 per MMBtu on January 4, 2018.

We also have manufacturing facilities located in the United Kingdom. These facilities are subject to fluctuations associated with the price of natural gas in Europe, which has also been volatile in recent years. The major natural gas trading point for the United Kingdom is the National Balancing Point (NBP). During 2018, the daily closing price at NBP reached a low of $6.60 per MMBtu on two consecutive days in January 2018 and a high of $31.74 per MMBtu on March 2, 2018. During the three-year period ended December 31, 2018, the daily closing price at NBP reached a low of $2.80 per MMBtu on September 1, September 12 and September 14, 2016 and a high of $31.74 per MMBtu on March 2, 2018.

Changes in the supply of and demand for natural gas can lead to extended periods of higher natural gas prices. If high prices were to persist, especially during a period of low fertilizer selling prices, it could have a material adverse effect on our business, financial condition, results of operations and cash flows.

The price of natural gas in North America and worldwide has been volatile in recent years and has declined on average due in part to the development of significant natural gas reserves, including shale gas, and the rapid improvement in shale gas extraction techniques, such as hydraulic fracturing and horizontal drilling. Future production of natural gas from shale formations could be reduced by regulatory changes that restrict drilling or hydraulic fracturing or increase its cost or by reduction in oil exploration and development prompted by lower oil prices and resulting in production of less associated gas.

Certain of our plants are located near natural gas hubs that have experienced increased natural gas development and have favorable basis differences as compared to other North American hubs. Favorable basis differences in certain regions may dissipate over time due to increases in natural gas pipeline or storage capacity in those regions. Additionally, basis differentials may become materially unfavorable due to a lack of inbound gas pipeline or storage capacity in other regions during periods of unusually high demand. Increased demand for natural gas, particularly in the Gulf Coast Region, due to increased industrial demand and increased natural gas exports could result in increased natural gas prices. If such reduced production, increased demand or changes in basis were to occur, or if other developments adversely impact the supply/demand balance for natural gas in the United States or elsewhere, natural gas prices could rise, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our operations and those of our joint venture are dependent upon raw materials provided by third parties, and any delay or interruption in the delivery of raw materials may adversely affect our business.

We and our joint venture use natural gas and other raw materials in the manufacture of nitrogen products. We purchase the natural gas and other raw materials from third party suppliers. Our natural gas is transported by pipeline to our facilities and those of our joint venture by third party transportation providers or through the use of facilities owned by third parties. Delays or interruptions in the delivery of natural gas or other raw materials may be caused by, among other things, severe weather or natural disasters, unscheduled downtime, labor difficulties, insolvency of our suppliers or their inability to meet existing contractual arrangements, deliberate sabotage and terrorist incidents, or mechanical failures. Our joint venture, Point Lisas Nitrogen Limited, has experienced natural gas curtailments as discussed in the risk factor below titled “We are exposed to risks associated with our joint venture.” In addition, the transport of natural gas by pipeline is subject to additional risks, including delays or interruptions caused by capacity constraints, leaks or ruptures. Any delay or interruption in the delivery of natural gas or other raw materials, even for a limited period, could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our transportation and distribution activities rely on third party providers and are subject to environmental, safety and regulatory oversight. This exposes us to risks and uncertainties beyond our control that may adversely affect our operations and exposes us to additional liability.

We rely on railroad, truck, pipeline, river barge and ocean vessel companies to transport raw materials to our manufacturing facilities, to coordinate and deliver finished products to our distribution system and to ship finished products to our customers. We also lease rail cars in order to ship raw materials and finished products. These transportation operations, equipment and services are subject to various hazards, including adverse operating conditions on the inland waterway system, extreme weather conditions, system failures, work stoppages, delays, accidents such as spills and derailments and other accidents and operating hazards. Additionally, due to the aging infrastructure of certain rail lines, bridges, roadways, pipelines, river locks, and equipment that our third party service providers utilize, we may experience delays in both the receipt of raw materials or the shipment of finished product while repairs, maintenance or replacement activities are conducted. Also, certain third party service providers, particularly railroads, have experienced periodic service slowdowns due to capacity constraints in their systems, operational and maintenance difficulties and other events, which impact the shipping times of our products.

These transportation operations, equipment and services are also subject to environmental, safety, and regulatory oversight. Due to concerns related to accidents, discharges or other releases of hazardous substances, terrorism or the potential use of fertilizers as explosives, governmental entities could implement new or more stringent regulatory requirements affecting the transportation of raw materials or finished products.

If shipping of our products is delayed or we are unable to obtain raw materials as a result of these transportation companies' failure to operate properly, or if new and more stringent regulatory requirements are implemented affecting transportation operations or equipment, or if there are significant increases in the cost of these services or equipment, our revenues and cost of operations could be adversely affected. In addition, increases in our transportation costs, or changes in such costs relative to transportation costs incurred by our competitors, could have a material adverse effect on our business, financial condition, results of operations and cash flows.

In the United States and Canada, the railroad industry continues various efforts to limit the railroads' potential liability stemming from the transportation of Toxic Inhalation Hazard materials, such as the anhydrous ammonia we transport to and from our manufacturing and distribution facilities. For example, various railroads shift liability to shippers by contract, purport to shift liability to shippers by tariff, or otherwise seek to require shippers to indemnify and defend the railroads from and against liabilities (including in negligence, strict liability, or statutory liability) that may arise from certain acts or omissions of the railroads, third parties with insufficient resources, unknown causes or acts of god. These initiatives could materially and adversely affect our operating expenses and potentially our ability to transport anhydrous ammonia and increase our liability for releases of our anhydrous ammonia while in the care, custody and control of the railroads or third parties, for which our insurance may be insufficient or unavailable. New or more stringent regulatory requirements also could be implemented affecting the equipment used to ship our raw materials or finished products. Restrictions on service, increases in transportation costs, or changes in such costs relative to transportation costs incurred by our competitors, and any railroad industry initiatives that may impact our ability to transport our products, could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our operations and the production and handling of our products involve significant risks and hazards. We are not fully insured against all potential hazards and risks incident to our business. Therefore, our insurance coverage may not adequately cover our losses.

Our operations are subject to hazards inherent in the manufacture, transportation, storage and distribution of chemical products, including ammonia, which is highly toxic and corrosive. These hazards include: explosions; fires; severe weather and natural disasters; train derailments, collisions, vessel groundings and other transportation and maritime incidents; leaks and ruptures involving storage tanks, pipelines and rail cars; spills, discharges and releases of toxic or hazardous substances or gases; deliberate sabotage and terrorist incidents; mechanical failures; unscheduled plant downtime; labor difficulties and other risks. Some of these hazards can cause bodily injury and loss of life, severe damage to or destruction of property and equipment and environmental damage, and may result in suspension of operations for an extended period of time and/or the imposition of civil or criminal penalties and liabilities.

We maintain property, business interruption, casualty and liability insurance policies, but we are not fully insured against all potential hazards and risks incident to our business. If we were to incur significant liability for which we were not fully insured, it could have a material adverse effect on our business, financial condition, results of operations and cash flows. We are subject to various self-retentions, deductibles and limits under these insurance policies. The policies also contain exclusions and conditions that could have a material adverse impact on our ability to receive indemnification thereunder. Our policies are generally renewed annually. As a result of market conditions, our premiums, self-retentions and deductibles for certain insurance policies can increase substantially and, in some instances, certain insurance may become unavailable or available only for reduced amounts of coverage. In addition, significantly increased costs could lead us to decide to reduce, or possibly eliminate, coverage. There can be no assurance that we will be able to buy and maintain insurance with adequate limits and reasonable pricing terms and conditions.

In April 2013, there was a fire and explosion at the West Fertilizer Co. fertilizer storage and distribution facility in West, Texas. According to published reports, 15 people were killed and approximately 200 people were injured in the incident, and the fire and explosion damaged or destroyed a number of homes and buildings around the facility. Various subsidiaries of CF Industries Holdings, Inc. (the CF Entities) were named as defendants along with other companies in lawsuits filed in 2013, 2014 and 2015 in the District Court of McLennan County, Texas by the City of West, individual residents of the County and other parties seeking recovery for damages allegedly sustained as a result of the explosion. The cases were consolidated for discovery and pretrial proceedings in the District Court of McLennan County under the caption “In re: West Explosion Cases.”

The two-year statute of limitations expired on April 17, 2015. As of that date, over 400 plaintiffs had filed claims, including at least 9 entities, 325 individuals, and 80 insurance companies. Plaintiffs allege various theories of negligence, strict liability, and breach of warranty under Texas law. Although we do not own or operate the facility or directly sell our products to West Fertilizer Co., products that the CF Entities manufactured and sold to others were delivered to the facility and may have been stored at the West facility at the time of the incident. The Court granted in part and denied in part the CF Entities' Motions for Summary Judgment in August 2015. Over two hundred cases have been resolved pursuant to confidential settlements that have been or we expect will be fully funded by insurance. The remaining cases are in various stages of discovery and pre-trial proceedings. The next group of cases was reset for trial beginning on July 23, 2019. We believe we have strong legal and factual defenses and intend to continue defending the CF Entities vigorously in the pending lawsuits. The increased focus on the risks associated with fertilizers as a result of the incident could impact the regulatory environment and requirements applicable to fertilizer manufacturing and storage facilities.

Our substantial indebtedness could adversely affect our cash flow, prevent us from fulfilling our obligations and impair our ability to pursue or achieve other business objectives.

As of December 31, 2018, we had approximately $4.70 billion of total funded indebtedness, consisting primarily of secured and unsecured senior notes with varying maturity dates between 2020 and 2044, or approximately 45% of our total capitalization, and an additional $746 million of senior secured borrowing availability (reflecting no outstanding borrowings and $4 million of outstanding letters of credit) under our senior secured revolving credit agreement (as amended, the Revolving Credit Agreement). Our substantial debt service obligations will have an impact on our earnings and cash flow for so long as the indebtedness is outstanding.

Our substantial indebtedness could, through the operation of the financial and other restrictive covenants to which we are subject under the agreements and instruments governing that indebtedness and otherwise, have important consequences. For example, it could:

- make it more difficult for us to pay or refinance our debts as they become due during adverse economic and industry conditions because any related decrease in revenues could cause us not to have sufficient cash flows from operations to make our scheduled debt payments;
- cause us to be less able to take advantage of significant business opportunities, such as acquisition opportunities, and to react to changes in market or industry conditions;
- cause us to use a portion of our cash flow from operations for debt service, reducing the availability of cash to fund working capital and capital expenditures, and other business activities;
- cause us to be more vulnerable to general adverse economic and industry conditions;
- expose us to the risk of increased interest rates because certain of our borrowings, including borrowings under our Revolving Credit Agreement, could be at variable rates of interest;
- make us more leveraged than some of our competitors, which could place us at a competitive disadvantage;
- restrict our investments in our subsidiaries, which could limit our ability to fund certain of our businesses;
- restrict our ability to dispose of assets or otherwise restrict our use of funds from the disposal of assets;
- restrict our ability to pay dividends on our common stock or utilize excess cash to repurchase shares of our common stock;
- limit our ability to borrow additional monies in the future to fund working capital, capital expenditures and other general corporate purposes; and
- result in a downgrade in the credit rating of our indebtedness which could increase the cost of further borrowings.

We expect to consider options to refinance our outstanding indebtedness from time to time. Our ability to obtain any financing, whether through the issuance of new debt securities or otherwise, and the terms of any such financing are dependent on, among other things, our financial condition, financial market conditions within our industry and generally, credit ratings and numerous other factors, including factors beyond our control. Consequently, in the event that we need to access the credit markets, including to refinance our debt, there can be no assurance that we will be able to obtain financing on acceptable terms or within an acceptable timeframe, if at all. An inability to obtain financing with acceptable terms when needed could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our Revolving Credit Agreement and the terms of our outstanding indebtedness impose significant operating and financial restrictions on us and our subsidiaries, which may prevent us from capitalizing on business opportunities.
Our Revolving Credit Agreement imposes significant operating and financial restrictions on us. These restrictions include covenants limiting our ability and the ability of our subsidiaries (other than certain excluded subsidiaries) to, among other things:

- incur additional indebtedness or guarantee indebtedness;
- pay dividends on, repurchase or make distributions in respect of their capital stock or make other restricted payments;
- make certain investments or acquisitions;
- sell, transfer or otherwise convey certain assets;
- create liens;
- consolidate, merge, sell or otherwise dispose of all or substantially all of our and our restricted subsidiaries' assets; and
- prepay certain kinds of indebtedness.

In addition, our Revolving Credit Agreement requires us to comply with consolidated interest coverage ratio, total debt to capital ratio, and consolidated secured leverage ratio maintenance covenants.
Certain of these restrictions could be suspended if and for so long as we satisfy certain investment grade corporate rating and consolidated leverage tests. However, we cannot assure you that we will meet these tests or, if we do, that we will be able to maintain compliance with those conditions.
As a result of these restrictions and covenants under our existing indebtedness, including our senior secured notes, we are limited as to how we conduct our business and we may be unable to raise additional debt financing to compete effectively or to take advantage of new business opportunities. The terms of any future indebtedness we may incur could include additional or more restrictive covenants. We cannot assure you that we will be able to maintain compliance with the covenants under the terms of our indebtedness or, if we fail to do so, that we will be able to obtain waivers from the lenders and/or amend such covenants.
We may incur additional indebtedness in the future.
The terms of our existing indebtedness allow us to incur additional debt in the future, including additional secured and unsecured indebtedness. The indentures governing our senior secured notes do not limit incurrence by us of additional unsecured indebtedness, and will permit us to incur additional secured indebtedness subject to certain restrictions. Although our Revolving Credit Agreement contains restrictions on our ability to incur additional secured and unsecured indebtedness, these restrictions are subject to exceptions and qualifications, which allow us to incur additional secured and unsecured indebtedness in limited amounts. If we incur additional indebtedness, the risks that we face as a result of our leverage could intensify. If our financial condition or operating results deteriorate, our relations with our creditors, including the holders of our outstanding debt securities, the lenders under our Revolving Credit Agreement and our suppliers, may be materially and adversely affected.
A breach of the covenants under any of the agreements governing our indebtedness could result in an event of default under such agreements.
Our ability to comply with the covenants in the agreements and instruments governing our indebtedness will depend upon our future performance and various other factors, such as market prices for our nitrogen products, natural gas prices and other business, competitive and regulatory factors, many of which are beyond our control. We may not be able to maintain compliance with all of these covenants. In that event, we would need to seek an amendment to our debt agreements or would need to refinance our indebtedness. There can be no assurance that we can obtain future amendments or waivers of our debt agreements and instruments, or refinance our debt, and, even if we were able to do so, such relief might only last for a limited period, potentially necessitating additional amendments, waivers or refinancings. Any noncompliance by us with the covenants under our debt agreements and instruments could result in an event of default under those debt agreements and instruments. An event of default under an agreement or instrument governing any of our indebtedness may allow our creditors to accelerate the related debt and may result in

the acceleration of any other debt to which a cross-acceleration or cross-default provision applies. If our lenders or holders of our debt securities accelerate the repayment of borrowings, we may be forced to liquidate certain assets to repay all or part of our indebtedness, which could materially and adversely impair our business operations. An event of default under our Revolving Credit Agreement would permit the lenders thereunder to terminate all commitments to extend further credit under our Revolving Credit Agreement. Furthermore, our Revolving Credit Agreement and senior secured notes provide for liens on specified collateral to secure our obligations thereunder, and if we were unable to repay amounts due and payable under our Revolving Credit Agreement or the senior secured notes, our Revolving Credit Agreement lenders or holders of the senior secured notes, as applicable, could proceed against the collateral granted to them, which could have a material adverse effect on our business, financial condition and results of operations. In the event our creditors accelerate the repayment of our indebtedness, we cannot assure that we would have sufficient assets to make such repayment.

Potential future downgrades of our credit ratings could adversely affect our access to capital and could otherwise have a material adverse effect on us.

As of February 14, 2019, our corporate credit rating by S&P Global Ratings is BB+ with a stable outlook; our corporate credit rating by Moody's Investor Services, Inc. is Ba2 with a stable outlook; and our corporate credit rating with Fitch Ratings, Inc. is BB+ with a stable outlook.

These ratings and our current credit condition affect, among other things, our ability to access new capital, especially debt, and negative changes in these ratings may result in more stringent covenants and higher interest rates under the terms of any new debt. Our credit ratings were downgraded in 2016 and rating agencies could further downgrade our credit ratings or issue adverse commentaries in the future, which could have a material adverse effect on our business, results of operations, financial condition and liquidity. In particular, a weakening of our financial condition, including a significant increase in our leverage or decrease in our profitability or cash flows, could adversely affect our ability to obtain necessary funds, result in a credit rating downgrade or change in outlook, or otherwise increase our cost of borrowing.

Cyber security risks could result in disruptions in business operations and adverse operating results.

We rely on internal and third-party information technology and computer control systems in many aspects of our business, including internal and external communications, the management of our accounting, financial and supply chain functions and plant operations. Business and supply chain disruptions, plant and utility outages and information technology system and network disruptions due to cyber attacks could seriously harm our operations and materially adversely affect our operating results. Cyber security risks include attacks on information technology and infrastructure by hackers, damage or loss of information due to viruses, the unintended disclosure of confidential information, the misuse or loss of control over computer control systems, and breaches due to employee error. Our exposure to cyber security risks includes exposure through third parties, including any cloud-based technologies, on whose systems we place significant reliance for the conduct of our business. We routinely review and implement security procedures and measures in order to protect our systems and information from being vulnerable to evolving cyber attacks. We believe these measures and procedures are appropriate. However, we may not have the resources or technical sophistication to anticipate, prevent, or recover from rapidly evolving types of cyber attacks. Compromises to our information and control systems could have severe financial and other business implications.

Adverse weather conditions may decrease demand for our fertilizer products, increase the cost of natural gas or materially disrupt our operations.

Weather conditions that delay or disrupt field work during the planting, growing, harvesting or application periods may cause agricultural customers to use different forms of nitrogen fertilizer, which may adversely affect demand for the forms that we sell or may impede farmers from applying our fertilizers until the following application period, resulting in lower seasonal demand for our products.

Adverse weather conditions during or following harvest may delay or eliminate opportunities to apply fertilizer in the fall. Weather can also have an adverse effect on crop yields, which could lower the income of growers and impair their ability to purchase fertilizer from our customers. Adverse weather conditions could also impact transportation of fertilizer, which could disrupt our ability to deliver our products to customers on a timely basis. Our quarterly financial results can vary significantly from one year to the next due to weather-related shifts in planting schedules and purchasing patterns. Over the longer-term, changes in weather patterns may shift the periods of demand for products and even the regions to which our products are distributed, which could require us to evolve our distribution system.

In addition, we use the North American waterway system extensively to ship products from some of our manufacturing facilities to our distribution facilities and our customers, and we also export nitrogen fertilizer products via seagoing vessels from deep-water docking facilities at certain of our manufacturing sites. Therefore, persistent significant changes in river or ocean water levels (either up or down, such as a result of flooding or drought for example), may require changes to our operating and distribution activities and/or significant capital improvements to our facilities.

Weather conditions or, in certain cases, weather forecasts, also can affect the price of natural gas, the principal raw material used to make our nitrogen fertilizer products. Colder and/or longer than normal winters and warmer than normal summers increase the demand for natural gas for power generation and for residential and industrial use, which can increase the cost and/or decrease the availability of natural gas. In addition, adverse weather events such as very low temperatures leading to well freeze-offs or hurricanes affecting the Gulf of Mexico coastal states can impact the supply of natural gas and cause prices to rise.

Tax matters, including changes in tax laws or rates, adverse determinations by taxing authorities and imposition of new taxes could adversely affect our results of operations and financial condition.

We are subject to taxes in the United States, where most of our operations are located, and numerous foreign jurisdictions where our subsidiaries are organized. Tax rates in various jurisdictions in which we operate may be subject to significant change. Our future effective tax rate could be affected by changes in our mix of earnings from countries with differing statutory tax rates and tax systems, changes in valuation of deferred tax assets and liabilities or changes in tax laws or their interpretation.

We are also subject to regular reviews, examinations and audits by the IRS and other taxing authorities with respect to taxes inside and outside of the United States. Although we believe our tax estimates are reasonable, if a taxing authority disagrees with the positions we have taken, we could face additional tax liability, including interest and penalties. There can be no assurance that payment of such additional amounts upon final adjudication of any disputes will not have a material impact on our results of operations and financial condition.

We have used the cash we generate outside the United States primarily to fund development of our business in non-U.S. jurisdictions. If the funds generated by our U.S. business are not sufficient to meet our need for cash in the United States, we may need to repatriate a portion of our future international earnings to the United States. Under the tax laws of the foreign countries in which we operate, those international earnings would be subject to withholding taxes when repatriated; therefore, the repatriation of those earnings could result in an increase in our worldwide effective tax rate and an increase in our use of cash to pay these taxes.

We also need to comply with other new, evolving or revised tax laws and regulations. The enactment of, or increases in, tariffs or value added taxes, or other changes in the application of existing taxes, in markets in which we are currently active, or may be active in the future, or on specific products that we sell or with which our products compete, could have an adverse effect on our results of operations and financial condition.

On December 22, 2017, the President of the United States signed into law the Tax Cut and Jobs Act of 2017 (the “Tax Act” or “Tax Reform”). The Tax Act significantly changes how the U.S. taxes corporations. The Tax Act requires complex computations to be performed that were not previously required in U.S. tax law, significant judgments to be made in interpretation of the provisions of the Tax Act and significant estimates in calculations, and the preparation and analysis of information not previously relevant or regularly produced. The U.S. Treasury Department, the IRS, and other standard-setting bodies are in the process of issuing guidance on how the provisions of the Tax Act will be applied or otherwise administered that could be different from the interpretation currently reflected in our financial statements or tax returns. As new or amended guidance is issued with respect to the Tax Act, we may need to record adjustments to amounts previously recorded for taxes and such adjustments could have a material impact on our provision for income taxes in the period in which such adjustments are made.

In addition, foreign governments may enact tax laws in response to the Tax Act that could result in further changes to global taxation and materially affect our financial position and results of operations.

The United States and other countries in which we operate are in the process of implementing the Organization for Economic Co-operation and Development’s Base Erosion and Profit Shifting Project (BEPS). BEPS is intended to improve tax disclosure and transparency and eliminate structures and activities that could be perceived by a particular country as resulting in tax avoidance. Each country is permitted to introduce its own legislation to implement BEPS. As a number of our business operations do business across country lines, we are subject to BEPS. The implementation of BEPS could result in tax changes and may adversely affect our provision for income taxes, results of operations and cash flows.

We are reliant on a limited number of key facilities.

Our nitrogen fertilizer operations are located at nine separate nitrogen complexes, the largest of which is the Donaldsonville complex, which represented approximately 40% of our ammonia production capacity as of December 31, 2018. The suspension of operations at any of these complexes could adversely affect our ability to produce our products and fulfill our commitments, and could have a material adverse effect on our business, financial condition, results of operations and cash flows. In addition, our Donaldsonville complex is located in an area of the United States that experiences a relatively high level of hurricane or high wind activity and several of our complexes are located in areas that experience severe weather. Such storms, depending on their severity and location, have the potential not only to damage our facilities and disrupt our operations, but also to affect adversely the shipping and distribution of our products. Moreover, our facilities may be subject to failure of equipment that may be difficult to replace or have long delivery lead times and could result in operational disruptions.

We are subject to numerous environmental, health and safety laws, regulations and permitting requirements, as well as potential environmental liabilities, which may require us to make substantial expenditures.

We are subject to numerous environmental, health and safety laws and regulations in the United States, Canada, the United Kingdom, the European Union and the Republic of Trinidad and Tobago, including laws and regulations relating to the generation and handling of hazardous substances and wastes; the cleanup of hazardous substance releases; the discharge of regulated substances to air or water; and the demolition of existing plant sites upon permanent closure. In the United States, these laws include the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Toxic Substances Control Act and various other federal, state, provincial, local and international laws.

As a producer of nitrogen fertilizer products working with hazardous substances, our business faces risks of spills, discharges or other releases of those substances into the environment. Certain environmental laws, including CERCLA, impose joint and several liability, without regard to fault, for cleanup costs on persons who have disposed of or released hazardous substances into the environment. Given the nature of our business, we have incurred, are incurring currently, and are likely to incur periodically in the future, liabilities under CERCLA and other environmental cleanup laws at our current facilities or facilities previously owned by us or other acquired businesses, adjacent or nearby third-party facilities or offsite disposal locations. The costs associated with future cleanup activities that we may be required to conduct or finance may be material. Additionally, we may become liable to third parties for damages, including personal injury and property damage, resulting from the disposal or release of hazardous substances into the environment.

Violations of environmental, health and safety laws can result in substantial penalties, court orders to install pollution-control equipment, civil and criminal sanctions, permit revocations and facility shutdowns. Environmental, health and safety laws change regularly and have tended to become more stringent over time. As a result, we have not always been and may not always be in compliance with all environmental, health and safety laws and regulations. We may be subject to more stringent enforcement of existing or new environmental, health and safety laws in the future. Additionally, future environmental, health and safety laws and regulations or reinterpretation of current laws and regulations may require us to make substantial expenditures. Our costs to comply with, or any liabilities under, these laws and regulations could have a material adverse effect on our business, financial condition, results of operations and cash flows.

From time to time, our production of anhydrous ammonia has resulted in accidental releases that have temporarily disrupted our manufacturing operations and resulted in liability for administrative penalties and claims for personal injury. To date, our costs to resolve these liabilities have not been material. However, we could incur significant costs if our liability coverage is not sufficient to pay for all or a large part of any judgments against us, or if our insurance carrier refuses coverage for these losses.

We hold numerous environmental and other governmental permits and approvals authorizing operations at each of our facilities. Expansion or modification of our operations is predicated upon securing necessary environmental or other permits or approvals. A decision by a government agency to deny or delay issuing a new or renewed regulatory material permit or approval, or to revoke or substantially modify an existing permit or approval, or a determination that we have violated a law or permit as a result of a governmental inspection of our facilities could have a material adverse effect on our ability to continue operations at our facilities and on our business, financial condition, results of operations and cash flows.

Future regulatory restrictions on greenhouse gas (GHG) emissions in the jurisdictions in which we operate could materially adversely affect our business, financial condition, results of operations and cash flows.

We are subject to GHG regulations in the United Kingdom, Canada and the United States. In the United States, our existing facilities currently are only subject to GHG emissions reporting obligations, although our new and modified facilities are likely to be subject to GHG emissions standards included in their air permits. Our facilities in the United

Kingdom are subject to the European Union Emissions Trading System (EU ETS), which generally require us to hold or obtain emissions allowances to offset GHG emissions from those aspects of our operations that are subject to regulation under this program. The continued applicability of the EU ETS in the United Kingdom is uncertain due to the potential exit of the United Kingdom from the European Union (Brexit), which could result in more stringent GHG regulations than those imposed by the EU ETS.

Beginning in 2018, the Medicine Hat Nitrogen Complex, which had been subject to Alberta's Specified Gas Emitters Regulation, became subject to Alberta's new Carbon Competitiveness Incentive Regulation (CCIR). This regulation establishes product-specific benchmarks based on the most efficient GHG emitting facilities in a sector. A facility with emissions that exceed the applicable benchmark is required to take action to reduce its GHG emissions intensity, purchase emissions offsets or performance credits, or make contributions to Alberta's climate fund. The obligations under this regulation are being phased in over a three-year period and will be tightened over time. The federal government formally determined that Alberta's CCIR meets its stringency requirements and so will not impose the Output-Based Performance System (OBPS), also called the “federal backstop,” which is being implemented by Environment and Climate Change Canada (ECCC) pursuant to the federal Greenhouse Pollution Pricing Act (“GPPA”) that came into effect in June 2018. However, the government of Alberta has not determined whether it will agree to increase the effective price of carbon beyond the current price of \$30 per ton of excess carbon dioxide equivalent ($CO_2$e). This could result in regulated facilities in Alberta being subject to the OBPS beginning in 2021, when the effective price of carbon pursuant to the GPPA rises to \$40 per ton of excess $CO_2$e .

The Courtright Nitrogen Complex had been subject to Ontario’s GHG cap-and-trade program beginning in January 2017, but the new conservative government elected in June 2018 rescinded that program in one of its first acts. Because Ontario no longer has a GHG regulatory regime, the federal government imposed the OBPS in the province beginning in 2019. ECCC is currently proposing that the benchmark for nitrogen fertilizer plants will be set at 90% of the average performance of all Canadian fertilizer plants. A facility whose carbon emissions exceed this benchmark will be required to offset excess emissions by obtaining and retiring surplus emission credits; obtaining qualifying emission offsets; or paying a fee of \$20 per ton of excess $CO_2$e for calendar year 2019, which fee will rise by \$10 per ton each year through 2022. Ontario and Saskatchewan are challenging whether the federal government has jurisdiction to impose a federal carbon price on the provinces and territories.

There are substantial uncertainties as to the nature, stringency and timing of any future GHG regulations in other jurisdiction, including the United States. On December 12, 2015, 195 countries adopted by consensus a new international agreement known as the Paris Agreement. The Paris Agreement, which has been accepted by the United States and ratified by Canada and the United Kingdom, went into effect in November 2016. However, in June 2017, the United States announced its intention to withdraw from the Paris Agreement, subject to renegotiation of the Paris Agreement on terms more favorable to the United States. Under the terms of the Paris Agreement, the United States cannot formally provide notice of its withdrawal before November 2019, which would become effective one year after providing such notice. In the interim, it is unclear if the United States will comply with its commitments under the Paris Agreement. There has been no indication to date that the United States’ announced withdrawal is causing other countries to also consider withdrawing from the Paris Agreement. If the Paris Agreement remains in effect, it could result in more aggressive efforts to reduce GHG emissions in the jurisdictions in which we operate.

More stringent GHG regulations, if they are enacted, are likely to have a significant impact on us, because our production facilities emit GHGs such as carbon dioxide and nitrous oxide and because natural gas, a fossil fuel, is a primary raw material used in our nitrogen production process. Regulation of GHGs may require us to make changes in our operating activities that would increase our operating costs, reduce our efficiency, limit our output, require us to make capital improvements to our facilities, increase our costs for or limit the availability of energy, raw materials or transportation, or otherwise materially adversely affect our business, financial condition, results of operations and cash flows. In addition, to the extent that GHG restrictions are not imposed in countries where our competitors operate or are less stringent than regulations that may be imposed in the United States, Canada or the United Kingdom, our competitors may have cost or other competitive advantages over us.

We may not be successful in the expansion of our business.

We routinely consider possible expansions of our business, both within the United States and elsewhere. Major investments in our business, including as a result of acquisitions, partnerships, joint ventures, business combination transactions or other major investments require significant managerial resources, the diversion of which from our other activities may impair the operation of our business. We may be unable to identify or successfully compete for certain acquisition targets, which may hinder or prevent us from acquiring a target or completing other transactions. The risks of any expansion of our business through investments, acquisitions, partnerships, joint ventures or business combination transactions are increased due to the significant capital and other resources that we may have to commit to any such expansion, which may not be recoverable if the expansion initiative to which they were devoted is ultimately not implemented. As a result of these and other factors, including general economic risk, we may not be able to realize our projected returns from any future acquisitions, partnerships, joint ventures, business combination transactions or other major investments. Among the risks associated with the pursuit and consummation of acquisitions, partnerships, joint ventures or other major investments or business combination transactions are those involving:

- difficulties in integrating the parties' operations, systems, technologies, products and personnel;
- incurrence of significant transaction-related expenses;
- potential integration or restructuring costs;
- potential impairment charges related to the goodwill, intangible assets or other assets to which any such transaction relates, in the event that the economic benefits of such transaction prove to be less than anticipated;
- other unanticipated costs associated with such transactions;
- our ability to achieve operating and financial efficiencies, synergies and cost savings;

- our ability to obtain the desired financial or strategic benefits from any such transaction;
- the parties' ability to retain key business relationships, including relationships with employees, customers, partners and suppliers;
- potential loss of key personnel;
- entry into markets or involvement with products with which we have limited current or prior experience or in which competitors may have stronger positions;
- assumption of contingent liabilities, including litigation;
- exposure to unanticipated liabilities;
- differences in the parties' internal control environments, which may require significant time and resources to resolve in conformity with applicable legal and accounting standards;
- increased scope, geographic diversity and complexity of our operations;
- the tax effects of any such transaction; and
- the potential for costly and time-consuming litigation, including stockholder lawsuits.

International acquisitions, partnerships, joint ventures, business combinations or investments and other international expansions of our business involve additional risks and uncertainties, including, but not limited to:

- the impact of particular economic, tax, currency, political, legal and regulatory risks associated with specific countries;
- challenges caused by distance and by language and cultural differences;
- difficulties and costs of complying with a wide variety of complex laws, treaties and regulations;
- unexpected changes in regulatory environments;
- political and economic instability, including the possibility for civil unrest;
- nationalization of properties by foreign governments;
- tax rates that may exceed those in the United States, and earnings that may be subject to withholding requirements;
- the imposition of tariffs, exchange controls or other restrictions; and
- the impact of currency exchange rate fluctuations.

If we finance acquisitions, partnerships, joint ventures, business combination transactions or other major investments by issuing equity or convertible or other debt securities or loans, our existing stockholders may be diluted or we could face constraints under the terms of, and as a result of the repayment and debt-service obligations under, the additional indebtedness. A business combination transaction between us and another company could result in our stockholders receiving cash or shares of another entity on terms that such stockholders may not consider desirable. Moreover, the regulatory approvals associated with a business combination may result in divestitures or other changes to our business, the effects of which are difficult to predict.

Our operating results fluctuate due to seasonality. Our inability to predict future seasonal fertilizer demand accurately could result in our having excess inventory, potentially at costs in excess of market value, or product shortages.

The fertilizer business is seasonal. The degree of seasonality of our business can change significantly from year to year due to conditions in the agricultural industry and other factors. The strongest demand for our products in North America occurs during the spring planting season, with a second period of strong demand following the fall harvest. In contrast, we and other fertilizer producers generally manufacture and distribute products throughout the year. As a result, we and/or our customers generally build inventories during the low demand periods of the year to ensure timely product availability during the peak sales seasons. Seasonality is greatest for ammonia due to the short application season and the limited ability of our customers and their customers to store significant quantities of this product. The seasonality of fertilizer demand generally results in our sales volumes and net sales being the highest during the spring and our working capital requirements being the highest just prior to the start of the spring planting season.

If seasonal demand is less than we expect, we may be left with excess inventory that will have to be stored (in which case our results of operations will be negatively affected by any related increased storage costs) or liquidated (in which case the selling price may be below our production, procurement and storage costs). The risks associated with excess inventory and product shortages are exacerbated by the volatility of natural gas and nitrogen fertilizer prices and the relatively brief periods during which farmers can apply nitrogen fertilizers. If prices for our products rapidly decrease, we may be subject to inventory write-downs, adversely affecting our operating results. If seasonal demand is greater than we expect, we may experience product shortages, and customers of ours may turn to our competitors for products that they would otherwise have purchased from us.

A change in the volume of products that our customers purchase on a forward basis, or the percentage of our sales volume that is sold to our customers on a forward basis, could increase our exposure to fluctuations in our profit margins and materially adversely affect our business, financial condition, results of operations and cash flows.

We offer our customers the opportunity to purchase products from us on a forward basis at prices and delivery dates we propose. Under our forward sales programs, customers generally make an initial cash down payment at the time of order and pay the remaining portion of the contract sales value in advance of the shipment date. Forward sales improve our liquidity due to the cash payments received from customers in advance of shipment of the product and allow us to improve our production scheduling and planning and the utilization of our manufacturing and distribution assets.

Any cash payments received in advance from customers in connection with forward sales are reflected on our consolidated balance sheets as a current liability until the related orders are shipped, which can take up to several months.

We believe the ability to purchase products on a forward basis is most appealing to our customers during periods of generally increasing prices for nitrogen fertilizers. Our customers may be less willing or even unwilling to purchase products on a forward basis during periods of generally decreasing or stable prices or during periods of relatively high fertilizer prices due to the expectation of lower prices in the future or limited capital resources. In periods of rising fertilizer prices, selling our nitrogen fertilizers on a forward basis may result in lower profit margins than if we had not sold fertilizer on a forward basis. Conversely, in periods of declining fertilizer prices, selling our nitrogen fertilizers on a forward basis may result in higher profit margins than if we had not sold fertilizer on a forward basis. In addition, fixing the selling prices of our products, often months in advance of their ultimate delivery to customers, typically causes our reported selling prices and margins to differ from spot market prices and margins available at the time of shipment.

Our business is subject to risks involving derivatives and the risk that our hedging activities might not prevent losses.

We may utilize natural gas derivatives to hedge our financial exposure to the price volatility of natural gas, the principal raw material used in the production of nitrogen-based products. We have used futures, financial swaps and option contracts traded in the over-the-counter markets or on exchanges. In order to manage our exposure to changes in foreign currency exchange rates, from time to time, we may use foreign currency derivatives, primarily forward exchange contracts.

Our use of derivatives can result in volatility in reported earnings due to the unrealized mark-to-market adjustments that occur from changes in the value of the derivatives that do not qualify for, or to which we do not apply, hedge accounting. To the extent that our derivative positions lose value, we may be required to post collateral with our counterparties, adversely affecting our liquidity.

We have also used fixed-price, physical purchase and sales contracts to hedge our exposure to natural gas price volatility. Hedging arrangements are imperfect and unhedged risks will always exist. In addition, our hedging activities may themselves give rise to various risks that could adversely affect us. For example, we are exposed to counterparty credit risk when our derivatives are in a net asset position. The counterparties to our derivatives are multi-national commercial banks, major financial institutions or large energy companies.

Our liquidity could be negatively impacted by a counterparty default on settlement of one or more of our derivative financial instruments or by the trigger of any cross default provisions or credit support requirements. Additionally, the International Swaps and Derivative Association master netting arrangements for most of our derivative instruments contain credit-risk-related contingent features, such as cross default provisions and credit support requirements. In the event of certain defaults or a credit ratings downgrade, our counterparty may request early termination and net settlement of certain derivative trades or may require us to collateralize derivatives in a net liability position.

At other times we may not utilize derivatives or derivative strategies to hedge certain risks or to reduce the financial exposure of price volatility. As a result, we may not prevent certain material adverse impacts that could have been mitigated through the use of derivative strategies.

We are subject to risk associated with our strategic venture with CHS Inc.

We may not realize the full benefits from our strategic venture with CHS that are expected. The realization of the expected benefits of the CHS strategic venture depends on our ability to operate and manage the strategic venture successfully, and on the market prices of the nitrogen fertilizer products that are the subject of our supply agreement with CHS over the life of the agreement, among other factors. Additionally, any challenges related to the CHS strategic venture could harm our relationships with CHS or our other customers.

We are exposed to risks associated with our joint venture.

We have a 50% ownership interest in PLNL, which owns and operates an ammonia production facility in the Republic of Trinidad and Tobago. Our joint venture partner shares a measure of control over the operations of our PLNL joint venture. As a result, our investment in our PLNL joint venture involves risks that are different from the risks involved in owning facilities and operations independently. These risks include the possibility that our PLNL joint venture or our partner: have economic or business interests or goals that are or become inconsistent with our economic or business interests or goals; are in a position to take action contrary to (or have veto rights over) our instructions, requests, policies or objectives; subject our PLNL joint venture to liabilities exceeding those contemplated; take actions that reduce our return on investment; or take actions that harm our reputation or restrict our ability to run our business.

In addition, we may become involved in disputes with our PLNL joint venture partner, which could lead to impasses or situations that could harm the joint venture, which could reduce our revenues or increase our costs.

PLNL's ammonia plant relies on natural gas supplied, under a Gas Sales Contract (the NGC Contract), by the National Gas Company of Trinidad and Tobago Limited (NGC). The joint venture experienced past curtailments in the supply of natural gas from NGC, which reduced the ammonia production at PLNL. The NGC Contract had an initial expiration date of September 2018 and was extended on the same terms until September 2023. Any NGC commitment to supply gas beyond 2023 will be based on new agreements. In May 2018, the NGC and PLNL reached a settlement of an arbitration proceeding regarding PLNL's claims for damages due to natural gas supply curtailments.

As part of our impairment assessments of our equity method investment in PLNL, we determined the carrying value exceeded the fair value and recognized a $134 million impairment charge in 2016 and a $62 million impairment charge in 2015 related to our equity method investment in PLNL. The carrying value of our equity method investment in PLNL at December 31, 2018 is $93 million. Failure to secure a long-term gas supply from NGC after 2023 on a cost effective basis could adversely affect our ability to produce ammonia at the joint venture and could result in further impairment to the value of the joint venture, such as ceasing operations and writing off the remaining investment in PLNL, which could have a material adverse effect on our results of operations.

Acts of terrorism and regulations to combat terrorism could negatively affect our business.

Like other companies with major industrial facilities, we may be targets of terrorist activities. Many of our plants and facilities store significant quantities of ammonia and other materials that can be dangerous if mishandled. Any damage to infrastructure facilities, such as electric generation, transmission and distribution facilities, or injury to employees, who could be direct targets or indirect casualties of an act of terrorism, may affect our operations. Any disruption of our ability to produce or distribute our products could result in a significant decrease in revenues and significant additional costs to replace, repair or insure our assets, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Due to concerns related to terrorism or the potential use of certain fertilizers as explosives, we are subject to various security laws and regulations. In the United States, these security laws include the Maritime Transportation Security Act of 2002 and the Chemical Facilities Anti-Terrorism Standards regulation. In addition, President Obama issued in 2013 Executive Order 13650 Improving Chemical Facility Safety and Security to improve chemical facility safety in coordination with owners and operators. Governmental entities could implement new or impose more stringent regulations affecting the security of our plants, terminals and warehouses or the transportation and use of fertilizers. These regulations could result in higher operating costs or limitations on the sale of our products and could result in significant unanticipated costs, lower revenues and reduced profit margins. We manufacture and sell certain nitrogen products that can be used as explosives. It is possible that governmental entities in the United States or elsewhere could impose additional limitations on the use, sale or distribution of nitrogen products, thereby limiting our ability to manufacture or sell those products, or that illicit use of our products could result in liability for us.

In October 2016, the Department of Homeland Security (DHS) released its new Chemical Security Assessment Tool (CSAT 2.0) surveys and enhanced risk tiering methodology. Facilities that had previously submitted a survey response to the DHS were notified to resubmit responses to online questionnaires to be evaluated through the revised and enhanced risk tiering methodology. In April 2017, the DHS began sending tiering determination letters to chemical facilities based on the new methodology. Depending on the risk classification resulting from the application of CSAT 2.0, our plants and terminals could be subject to more stringent requirements related to chemical security.

We are subject to risks associated with international operations.

Our international business operations are subject to numerous risks and uncertainties, including difficulties and costs associated with complying with a wide variety of complex laws, treaties and regulations; unexpected changes in regulatory environments; currency fluctuations; tax rates that may exceed those in the United States; earnings that may be subject to withholding requirements; and the imposition of tariffs, exchange controls or other restrictions. Changes in governmental trade policies can lead to the imposition of new duties, tariffs or quotas affecting agricultural commodities, fertilizer or industrial products. These can alter trade flows, access to supplies or demand, and regional balances for our products.

Our principal reporting currency is the U.S. dollar and our business operations and investments outside the United States increase our risk related to fluctuations in foreign currency exchange rates. The main currencies to which we are exposed, besides the U.S. dollar, are the Canadian dollar, the British pound and the euro. These exposures may change over time as business practices evolve and economic conditions change, including, for example, in response to sudden global economic conditions resulting from measures like the referendum in the United Kingdom in June 2016, which resulted in a vote in favor of exiting the European Union (Brexit), which is further discussed below. We may selectively reduce some foreign currency exchange rate risk by, among other things, requiring contracted purchases of our products to be settled in, or indexed to, the U.S. dollar or a currency freely convertible into U.S. dollars, or hedging through foreign currency derivatives. These efforts, however, may not be effective and could have a material adverse effect on our business, financial condition, results of operations and cash flows.

With regard to Brexit, a process of negotiation is now taking place to determine the future terms of the United Kingdom’s relationship with the European Union, with the United Kingdom due to exit the European Union on March 29, 2019. We operate two nitrogen manufacturing facilities in the United Kingdom, which utilize foreign-sourced materials and equipment, and which also export products in addition to serving customers in the United Kingdom. Brexit, including its indirect effects, could impact us in the future. For example, the cost and availability of natural gas or other raw materials or equipment that we purchase and the demand or selling prices for the nitrogen products that we sell, could be impacted by changes in tariffs, duties, trade restrictions or other factors. Brexit could lead to changes in trade flows, trading relationships, the movement of production to alternative locations, or the curtailment of certain production at certain sites. It could also lead to changes in the regulatory environment in which we operate, including the risk of more stringent restrictions on GHG emissions, as discussed above. Brexit could also impact foreign exchange rates or U.K. interest rates, which could impact our operations or the valuation of our assets and liabilities. Since the U.K. referendum in June 2016, the United Kingdom has experienced increases in the volatility of foreign exchange rates, which impacts our operations as discussed above. As a result of the uncertainty of Brexit, including its indirect effects, changes in the future profitability, asset utilization, or business valuation of our U.K. operations could negatively impact us and may result in an impairment of our long-lived assets or goodwill. As of December 31, 2018, long-lived assets, including property, plant and equipment and intangible assets, and goodwill related to the United Kingdom were $742 million and $264 million, respectively.

We are subject to anti-corruption laws and regulations and economic sanctions programs in various jurisdictions, including the U.S. Foreign Corrupt Practices Act of 1977, the United Kingdom Bribery Act of 2010, the Canadian Corruption of Foreign Public Officials Act, and economic sanctions programs administered by the United Nations, the European Union and the Office of Foreign Assets Control of the U.S. Department of the Treasury, and regulations set forth under the Comprehensive Iran Accountability Divestment Act. As a result of doing business internationally, we are exposed to a risk of violating anti-corruption laws and sanctions regulations applicable in those countries where we, our partners or agents operate. Violations of anti-corruption and sanctions laws and regulations are punishable by civil penalties, including fines, denial of export privileges, injunctions, asset seizures, debarment from government contracts (and termination of existing contracts) and revocations or restrictions of licenses, as well as criminal fines and imprisonment. The violation of applicable laws by our employees, consultants, agents or partners could subject us

to penalties and could have a material adverse effect on our business, financial condition, results of operations and cash flows.
We are subject to antitrust and competition laws in various countries throughout the world. We cannot predict how these laws or their interpretation, administration and enforcement will change over time. Changes in antitrust laws globally, or in their interpretation, administration or enforcement, may limit our existing or future operations and growth.

Deterioration of global market and economic conditions could have a material adverse effect on our business, financial condition, results of operations and cash flows.

A slowdown of, or persistent weakness in, economic activity caused by a deterioration of global market and economic conditions could adversely affect our business in the following ways, among others: conditions in the credit markets could affect the ability of our customers and their customers to obtain sufficient credit to support their operations; the failure of our customers to fulfill their purchase obligations could result in increases in bad debts and impact our working capital; and the failure of certain key suppliers could increase our exposure to disruptions in supply or to financial losses. We also may experience declining demand and falling prices for some of our products due to our customers' reluctance to replenish inventories. Changes in global economic conditions can arise suddenly and the full impact of such changes can be difficult to ascertain, resulting in anxiety among market participants that can persist for protracted periods. For example, concern and uncertainty over the potential impact of Brexit on the global economy has resulted in increased volatility in global financial markets. The overall impact of changes in global economic conditions on us is difficult to predict, and our business could be materially adversely impacted.

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FORWARD LOOKING STATEMENTS

From time to time, in this Annual Report on Form 10-K as well as in other written reports and oral statements, we make forward-looking statements that are not statements of historical fact and may involve a number of risks and uncertainties. These statements relate to analyses and other information that are based on forecasts of future results and estimates of amounts not yet determinable. These statements may also relate to our prospects, future developments and business strategies. We have used the words “anticipate,” “believe,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “predict,” “project,” “will” or “would” and similar terms and phrases, including references to assumptions, to identify forward-looking statements in this document. These forward-looking statements are made based on currently available competitive, financial and economic data, our current expectations, estimates, forecasts and projections about the industries and markets in which we operate and management’s beliefs and assumptions concerning future events affecting us. These statements are not guarantees of future performance and are subject to risks, uncertainties and factors relating to our operations and business environment, all of which are difficult to predict and many of which are beyond our control. Therefore, our actual results may differ materially from what is expressed in or implied by any forward-looking statements. We want to caution you not to place undue reliance on any forward-looking statements. We do not undertake any responsibility to release publicly any revisions to these forward-looking statements to take into account events or circumstances that occur after the date of this document. Additionally, we do not undertake any responsibility to provide updates regarding the occurrence of any unanticipated events which may cause actual results to differ from those expressed or implied by the forward-looking statements contained in this document.

Important factors that could cause actual results to differ materially from our expectations are disclosed under “Risk Factors” and elsewhere in this Annual Report on Form 10-K. Such factors include, among others:

- the cyclical nature of our business and the impact of global supply and demand on our selling prices;
- the global commodity nature of our fertilizer products, the conditions in the international market for nitrogen products, and the intense global competition from other fertilizer producers;
- conditions in the U.S. and European agricultural industry;
- the volatility of natural gas prices in North America and Europe;
- difficulties in securing the supply and delivery of raw materials, increases in their costs or delays or interruptions in their delivery;
- reliance on third party providers of transportation services and equipment;
- the significant risks and hazards involved in producing and handling our products against which we may not be fully insured;
- our ability to manage our indebtedness;
- operating and financial restrictions imposed on us by the agreements governing our senior secured indebtedness;
- risks associated with our incurrence of additional indebtedness;
- our ability to maintain compliance with covenants under the agreements governing our indebtedness;
- downgrades of our credit ratings;
- risks associated with cyber security;
- weather conditions;
- risks associated with changes in tax laws and disagreements with taxing authorities;
- our reliance on a limited number of key facilities;
- potential liabilities and expenditures related to environmental, health and safety laws and regulations and permitting requirements;
- future regulatory restrictions and requirements related to greenhouse gas emissions;
- risks associated with expansions of our business, including unanticipated adverse consequences and the significant resources that could be required;

- the seasonality of the fertilizer business;
- the impact of changing market conditions on our forward sales programs;
- risks involving derivatives and the effectiveness of our risk measurement and hedging activities;
- risks associated with the operation or management of the CHS strategic venture, risks and uncertainties relating to the market prices of the fertilizer products that are the subject of our supply agreement with CHS over the life of the supply agreement, and the risk that any challenges related to the CHS strategic venture will harm our other business relationships;
- risks associated with our PLNL joint venture;
- acts of terrorism and regulations to combat terrorism;
- risks associated with international operations; and
- deterioration of global market and economic conditions.

ITEM 1B. UNRESOLVED STAFF COMMENTS.

None.

ITEM 2. PROPERTIES.

Information regarding our facilities and properties is included in Item 1. Business—Reportable Segments and Item 1. Business—Storage Facilities and Other Properties.

Certain of our distribution and storage facilities in the United States are subject to mortgages securing obligations under the Revolving Credit Agreement and our senior secured notes. For additional information, see Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Debt.

ITEM 3. LEGAL PROCEEDINGS.

Litigation

West Fertilizer Co.

On April 17, 2013, there was a fire and explosion at the West Fertilizer Co. fertilizer storage and distribution facility in West, Texas. According to published reports, 15 people were killed and approximately 200 people were injured in the incident, and the fire and explosion damaged or destroyed a number of homes and buildings around the facility. Various subsidiaries of CF Industries Holdings, Inc. (the CF Entities) were named as defendants along with other companies in lawsuits filed in 2013, 2014 and 2015 in the District Court of McLennan County, Texas by the City of West, individual residents of the County and other parties seeking recovery for damages allegedly sustained as a result of the explosion. The cases were consolidated for discovery and pretrial proceedings in the District Court of McLennan County under the caption "In re: West Explosion Cases." The two-year statute of limitations expired on April 17, 2015. As of that date, over 400 plaintiffs had filed claims, including at least 9 entities, 325 individuals, and 80 insurance companies. Plaintiffs allege various theories of negligence, strict liability, and breach of warranty under Texas law. Although we do not own or operate the facility or directly sell our products to West Fertilizer Co., products that the CF Entities manufactured and sold to others were delivered to the facility and may have been stored at the West facility at the time of the incident.

The Court granted in part and denied in part the CF Entities' Motions for Summary Judgment in August 2015. Over two hundred cases have been resolved pursuant to confidential settlements that have been or we expect will be fully funded by insurance. The remaining cases are in various stages of discovery and pre-trial proceedings. The next group of cases was reset for trial beginning on July 23, 2019. We believe we have strong legal and factual defenses and intend to continue defending the CF Entities vigorously in the pending lawsuits. The Company cannot provide a range of reasonably possible loss due to the lack of damages discovery for many of the remaining claims and the uncertain nature of this litigation, including uncertainties around the potential allocation of responsibility by a jury to other defendants or responsible third parties. The recognition of a potential loss in the future in the West Fertilizer Co. litigation could negatively affect our results in the period of recognition. However, based upon currently available information, including available insurance coverage, we do not believe that this litigation will have a material adverse effect on our consolidated financial position, results of operations or cash flows.

Environmental

Florida Environmental Matters

On March 17, 2014, we completed the sale of our phosphate mining and manufacturing business, which was located in Florida, to Mosaic. Pursuant to the terms of the definitive agreement executed in October 2013 among CF Industries Holdings, Inc., CF Industries and Mosaic, Mosaic assumed the following environmental matters and we agreed to indemnify Mosaic with respect to losses arising out of the matters below, subject to a maximum indemnification cap and the other terms of the definitive agreement.

Clean Air Act Notice of Violation

We received a Notice of Violation (NOV) from the EPA by letter dated June 16, 2010, alleging that we violated the Prevention of Significant Deterioration Clean Air Act regulations relating to certain projects undertaken at the former Plant City, Florida facility's sulfuric acid plants. This NOV further alleges that the actions that are the basis for the alleged PSD violations also resulted in violations of Title V air operating permit regulations. Finally, the NOV alleges that we failed to comply with certain compliance dates established by hazardous air pollutant regulations for phosphoric acid manufacturing plants and phosphate fertilizer production plants. We had several meetings with the EPA with respect to this matter prior to our sale of the phosphate mining and manufacturing business in March 2014. We and Mosaic have separately had continued discussions with the EPA subsequent to our sale of the phosphate mining and manufacturing business with respect to this matter. We do not know at this time if this matter will be settled prior to initiation of formal legal action.

We cannot estimate the potential penalties, fines or other expenditures, if any, that may result from the Clean Air Act NOV and, therefore, we cannot determine if the ultimate outcome of this matter will have a material impact on our consolidated financial position, results of operations or cash flows.

EPCRA/CERCLA Notice of Violation

By letter dated July 6, 2010, the EPA issued a NOV to us alleging violations of Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) in connection with the former Plant City facility. EPCRA requires annual reports to be submitted with respect to the use of certain toxic chemicals. The NOV also included an allegation that we violated Section 304 of EPCRA and Section 103 of CERCLA by failing to file a timely notification relating to the release of hydrogen fluoride above applicable reportable quantities. We do not know at this time if this matter will be settled prior to initiation of formal legal action.

We do not expect that penalties or fines, if any, that may arise out of the EPCRA/CERCLA matter will have a material impact on our consolidated financial position, results of operations or cash flows.

Other Environmental Matters

For information on pending proceedings relating to environmental remediation matters, see Item 1. Business—Environmental, Health and Safety and Note 20—Contingencies to our consolidated financial statements included in Item 8 of this report.

ITEM 4. MINE SAFETY DISCLOSURES.

Not applicable.

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PART II

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

Our common stock is traded on the New York Stock Exchange under the symbol "CF". As of February 14, 2019, there were 715 stockholders of record.

The following table sets forth stock repurchases for each of the three months of the quarter ended December 31, 2018:

| | Issuer Purchases of Equity Securities | | | |
|---|---|---|---|---|
| Period | Total number of shares (or units) purchased | Average price paid per share (or unit) (1) | Total number of shares (or units) purchased as part of publicly announced plans or programs(2) | Maximum number (or approximate dollar value) of shares (or units) that may yet be purchased under the plans or programs (in thousands)(2) |
| October 1, 2018 - October 31, 2018 | 1,120,819(3) | $ 49.73 | 1,120,000 | $ 353,178 |
| November 1, 2018 - November 30, 2018 | 3,632,912(4) | 46.78 | 3,586,618 | 185,653 |
| December 1, 2018 - December 31, 2018 | 4,409,484 | 42.10 | 4,409,484 | — |
| Total | 9,163,215 | $ 44.89 | 9,116,102 | |

(1) Average price paid per share of CF Holdings common stock repurchased under the 2018 Share Repurchase Program, as defined below, is the execution price, excluding commissions paid to brokers.

(2) On August 1, 2018, our Board of Directors authorized management to repurchase CF Industries Holdings, Inc. (CF Holdings) common stock for a total expenditure of up to $500 million through June 30, 2020 (the 2018 Share Repurchase Program). We announced the 2018 Share Repurchase Program on August 1, 2018, and we completed the 2018 Share Repurchase Program in the fourth quarter of 2018. The 2018 Share Repurchase Program is discussed in Note 18—Stockholders' Equity, in the notes to the consolidated financial statements included in Item 8. Financial Statements and Supplementary Data.

(3) Includes 819 shares withheld to pay employee tax obligations upon the lapse of restrictions on restricted stock units.

(4) Includes 46,294 shares withheld to pay employee tax obligations upon the exercise of nonqualified stock options.

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ITEM 6. SELECTED FINANCIAL DATA.

The following selected historical financial data as of December 31, 2018 and 2017 and for the years ended December 31, 2018, 2017 and 2016 have been derived from our audited consolidated financial statements and related notes included elsewhere in this document. The following selected historical financial data as of December 31, 2016, 2015 and 2014 and for the years ended December 31, 2015 and 2014 have been derived from our consolidated financial statements that are not included in this document. The selected historical financial data should be read in conjunction with the information contained in Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations and Item 8. Financial Statements and Supplementary Data.

| | Year ended December 31, | | | | |
|---|---|---|---|---|---|
| | 2018 | 2017(1) | 2016(1) | 2015(1)(2) | 2014(1)(3) |
| | (in millions, except per share amounts) | | | | |
| Statement of Operations Data: | | | | | |
| Net sales | $4,429 | $4,130 | $3,685 | $ 4,308 | $ 4,743 |
| Cost of sales | 3,512 | 3,696 | 2,842 | 2,752 | 2,953 |
| Gross margin | 917 | 434 | 843 | 1,556 | 1,790 |
| Selling, general and administrative expenses | 214 | 191 | 173 | 169 | 147 |
| Transaction costs | — | — | 179 | 57 | — |
| Other operating—net | (27 ) | 18 | 208 | 92 | 51 |
| Total other operating costs and expenses | 187 | 209 | 560 | 318 | 198 |
| Gain on sale of phosphate business | | | | | |