MOSAIC CO
Form 10-K
February 15, 2017
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF
THE SECURITIES EXCHANGE ACT OF 1934
For the year ended December 31, 2016
¨ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF
THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____
Commission file number 001-32327

The Mosaic Company
(Exact name of registrant as specified in its charter)

Delaware	20-1026454
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

3033 Campus Drive
Suite E490
Plymouth, Minnesota 55441
(800) 918-8270
(Address and zip code of principal executive offices and registrant's telephone number, including area code)

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 x No ¨
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ¨ No x
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 x No ¨
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No ¨
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. x

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of “large accelerated filer”, “accelerated filer”, and “smaller reporting company” in Rule 12b-2 of the Exchange Act. (Check one): Large accelerated filer x Accelerated filer ¨ Non-accelerated filer ¨ Smaller reporting company ¨

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

As of June 30, 2016, the aggregate market value of the registrant’s voting common stock held by stockholders, other than directors, executive officers, subsidiaries of the Registrant and any other person known by the Registrant as of the date hereof to beneficially own ten percent or more of any class of Registrant’s outstanding voting common stock, and consisting of shares of Common Stock, was approximately $10.1 billion based upon the closing price of a share of Common Stock on the New York Stock Exchange on that date.

Indicate the number of shares outstanding of each of the registrant’s classes of common stock: 350,238,549 shares of Common Stock as of February 10, 2017.

DOCUMENTS INCORPORATED BY REFERENCE

1. Portions of the registrant’s definitive proxy statement to be delivered in conjunction with the 2017 Annual Meeting of Stockholders (Part III)

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2016 FORM 10-K CONTENTS

PART I.

Item 1. Business.

OVERVIEW

The Mosaic Company is the world's leading producer and marketer of concentrated phosphate and potash crop nutrients. We are the largest integrated phosphate producer in the world and one of the largest producers and marketers of phosphate-based animal feed ingredients in North America. We are one of the four largest potash producers in the world. Through our broad product offering, we are a single source supplier of phosphate- and potash-based crop nutrients and animal feed ingredients. We serve customers in approximately 40 countries. We mine phosphate rock in Florida and process rock into finished phosphate products at facilities in Florida and Louisiana. We mine potash in Saskatchewan and New Mexico. We have other production, blending or distribution operations in Brazil, China, India and Paraguay, as well as strategic equity investments in a phosphate rock mine in the Bayovar region in Peru and a joint venture formed to develop a phosphate rock mine and chemical complexes in the Kingdom of Saudi Arabia. Our distribution operations serve the top four nutrient-consuming countries in the world: China, India, the United States and Brazil.

The Mosaic Company is a Delaware corporation that was incorporated in March 2004 and serves as the parent company of the business that was formed through the October 2004 combination of IMC Global Inc. and the fertilizer businesses of Cargill, Incorporated. We are publicly traded on the New York Stock Exchange under the ticker symbol "MOS" and are headquartered in Plymouth, Minnesota.

We conduct our business through wholly and majority-owned subsidiaries as well as businesses in which we own less than a majority or a non-controlling interest. We are organized into three reportable business segments: Phosphates, Potash and International Distribution. Intersegment eliminations, mark-to-market gains/losses on derivatives, debt expenses, Streamsong Resort® results of operations and our legacy Argentina and Chile results are included within Corporate, Eliminations and Other.

The following charts show the respective contributions to 2016 sales volumes, net sales and operating earnings for each of these business segments:

Phosphates Segment — We are the largest integrated phosphate producer in the world and one of the largest producers and marketers of phosphate-based animal feed ingredients in North America. We sell phosphate-based crop nutrients and animal feed ingredients throughout North America and internationally. We account for approximately 14% of estimated global annual production and 75% of estimated North American annual production of concentrated phosphate crop nutrients.

Potash Segment — We are one of the four largest potash producers in the world. We sell potash throughout North America and internationally, principally as fertilizer, but also for use in industrial applications and, to a lesser degree, as animal feed ingredients. We account for approximately 12% of estimated global annual potash production and 39% of estimated North American annual potash production.

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International Distribution Segment — This segment consists of sales offices, crop nutrient blending and bagging facilities, port terminals and warehouses in Brazil, Paraguay, India and China. We also have a single superphosphate ("SSP") plant in Brazil that produces crop nutrients by mixing sulfuric acid with phosphate rock. Our International Distribution segment serves as a distribution outlet for our Phosphates and Potash segments, but also purchases and markets certain products from other suppliers, generally to complement sales of our own product.

As used in this report:

- "Mosaic" means The Mosaic Company;
- "we", "us", and "our" refer to Mosaic and its direct and indirect subsidiaries, individually or in any combination;
- "Cargill" means Cargill, Incorporated and its direct and indirect subsidiaries, individually or in any combination;
- "Cargill Crop Nutrition" means the crop nutrient business we acquired from Cargill in the Combination;
- "Combination" means the October 22, 2004 combination of IMC and Cargill Crop Nutrition;
- "Cargill Transaction" means the transactions described below under "Cargill Transaction"; and
- statements as to our industry position reflect information from the most recent period available.

Cargill Transaction

In May 2011, Cargill divested its interest in us in a split-off (the "Split-off") to its stockholders (the "Exchanging Cargill Stockholders") and a debt exchange ("Debt Exchange") with certain Cargill debt holders (the "Exchanging Cargill Debt Holders"). The agreements relating to the Cargill Transaction contemplated an orderly distribution of the approximately 64% (285.8 million) of our shares that Cargill formerly held. An aggregate of 157.0 million of these shares were sold by certain of the Exchanging Cargill Stockholders and the Exchanging Cargill Debt Holders in underwritten public secondary offerings or to us, and all other shares (approximately 128.8 million shares in the aggregate) of our Class A Common Stock ("Class A Shares") received by the Exchanging Cargill Stockholders in the split-off were subsequently either repurchased by us in 2014 or converted to regular shares of our Common Stock as described in Note 18 of our Consolidated Financial Statements. No Class A Shares remain outstanding and none are authorized under our Restated Certificate of Incorporation.

We have included additional information about the Cargill Transaction in Note 18 of our Consolidated Financial Statements, which information is incorporated herein by reference, and certain of the principal transaction documents related to the Cargill Transaction are incorporated by reference as exhibits to this report.

Business Developments during 2016

We took the following steps toward achieving our strategic priorities:

- Growth: Grow our production of essential crop nutrients and operate with increasing efficiency

- On December 19, 2016, we entered into an agreement to acquire Vale S.A.'s global phosphate and potash operations conducted through Vale Fertilizantes S.A. for a purchase price valued at $2.5 billion, consisting of $1.25 billion in cash and 42,286,874 shares of Mosaic common stock. When completed, this transaction will increase our finished phosphates capacity by approximately five million tonnes and our finished potash capacity by approximately 500,000 tonnes. The assets we will acquire upon closing include five Brazilian phosphate rock mines; four chemical plants; a potash mine in Brazil; an additional 40% economic interest in the Miski Mayo Mine, which will increase our aggregate interest to 75%; a Kronau, Saskatchewan potash project; and a 20% interest in the Tiplam port. We also have an option under the agreement to purchase a potash mine in Rio Colorado, Argentina. Upon closing, Mosaic expects to become the leading fertilizer production and distribution company in Brazil. On February 6, 2017 we received notice from the U.S. Federal Trade Commission that it had granted early termination of the applicable waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, satisfying one of the conditions to closing. The transaction is expected to close in late 2017 and is subject to the satisfaction of other regulatory and closing conditions.
- During 2016, we made equity contributions of $220 million to the Ma'aden Wa'ad Al Shamal Phosphate Company ("MWSPC"), our joint venture with Saudi Arabian Mining Company ("Ma'aden") and Saudi Basic Industries Corporation ("SABIC") to develop, own and operate integrated phosphate production facilities in the Kingdom of Saudi Arabia. Our cash investment at December 31, 2016 and as of the date of this report, is approximately $707 million. We currently estimate that our total cash investment in MWSPC, including the amount we have invested to date, will approximate $850 million. We expect our future cash contributions to be approximately $143 million. We estimate the total cost to

develop and construct the integrated phosphate

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production facilities to be approximately $8.0 billion. We expect this amount to be funded through external debt facilities, and investments by the joint venture members.

- We continued the expansion of capacity in our Potash segment with the K3 shafts at our Esterhazy mine, which we expect to begin mining potash ore in 2017 and following ramp-up, to add an estimated 0.9 million tonnes to our potash operational capacity. Once completed, this will provide us the opportunity to mitigate future brine inflow management costs and risk.
- On November 15, 2016 the U.S. Army Corps of Engineers issued the final permit that will allow us to extend our mining operations from our South Pasture, Florida phosphate mine onto the adjoining South Pasture Extension, which includes land parcels totaling approximately 7,500 acres. We believe this will enable us to extend our mining operations at South Pasture for an additional 14 years.
- In 2016, we commenced a proving run at our Belle Plaine, Saskatchewan potash mine which was completed on February 7, 2017, and will be taken into account in determining our Canpotex allocation in the second half of 2017.
- Market Access: Expand our reach and impact by continuously strengthening our distribution network
- We had record sales volumes of 6.8 million tonnes in our International Distribution segment in 2016.
- Innovation: Build on our industry-leading product, process and sustainability innovations
- We completed our investments to expand our MicroEssentials® capacity, adding an incremental 1.2 million tonnes and bringing our total capacity to 3.5 million tonnes in 2017. Our sales volumes of MicroEssentials® products in 2016 were 2.2 million tonnes, including sales from our International Distribution segment, which represents an increase of 23% over 2015.
- Total Shareholder Return: Deliver strong financial performance and provide meaningful returns to our shareholders
- On November 18, 2016 we upsized and extended our prior $1.5 billion unsecured revolving credit facility, and refinanced our prior term loan facility, with a new unsecured five-year credit facility comprised of a revolving credit facility of up to $2.0 billion and a $720 million term loan facility.
- We entered into, and in March 2016 settled, an accelerated share repurchase transaction under which we received a total of 2,766,588 shares of our Common Stock in exchange for a payment of $75 million. The transaction was conducted under the $1.5 billion repurchase program authorized by our Board of Directors in May 2015 (the "2015 Repurchase Program").
- We continued to execute against our cost saving initiatives in ways that are positively impacting financial results.

We are on track to meet the goal we set to achieve $500 million in cost savings by the end of 2018. We are approximately 80% of the way toward meeting this goal.

We are targeting an additional $75 million in savings in our support functions and expect to realize most of these savings by the end of 2017. Selling, general and administrative expenses in 2016 were the lowest amount in the last ten years, benefiting from our ongoing expense management initiatives.

We are managing our capital through the reduction, deferral or elimination of certain capital spending. Capital expenditures in 2016 were the lowest in over five years.

In July 2016, we temporarily idled our Colonsay, Saskatchewan potash mine for the remainder of 2016 in light of reduced customer demand while adapting to challenging potash market conditions. Our lower-cost Esterhazy and Belle Plaine mines, in combination with existing inventory, allowed us to meet our short-term potash supply needs for 2016. We resumed production at Colonsay in January 2017.

- Subsequent to year-end, we announced that our Board of Directors has approved a reduction in our target annual dividend to $0.60 per share, effective with our next declaration, expected in May 2017.

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We have included additional information about these and other developments in our business during 2016 in our Management's Discussion and Analysis of Financial Condition and Results of Operations ("Management's Analysis") and in the Notes to our Consolidated Financial Statements.

BUSINESS SEGMENT INFORMATION

The discussion below of our business segment operations should be read in conjunction with the following information that we have included in this report:

- The risk factors discussed in this report in Part I, Item 1A, "Risk Factors."
- Our Management's Analysis.
- The financial statements and supplementary financial information in our Consolidated Financial Statements ("Consolidated Financial Statements"). This information is incorporated by reference in this report in Part II, Item 8, "Financial Statements and Supplementary Data."

Phosphates Segment

Our Phosphates business segment owns and operates mines and production facilities in Florida which produce concentrated phosphate crop nutrients and phosphate-based animal feed ingredients, and processing plants in Louisiana which produce concentrated phosphate crop nutrients.

On March 17, 2014, we completed our acquisition (the "CF Phosphate Assets Acquisition") of the Florida phosphate assets and assumption of certain related liabilities of CF Industries, Inc. ("CF"), which included the 25,000-acre South Pasture phosphate mine and beneficiation plant in Hardee County, Florida, a phosphate manufacturing facility in Plant City, Florida, and ammonia terminal and finished product warehouse facilities in Tampa.

U.S. Phosphate Crop Nutrients and Animal Feed Ingredients

Our U.S. phosphates operations have capacity to produce approximately 5.3 million tonnes of phosphoric acid ("P2O5") per year, or about 10% of world annual capacity and about 60% of North American annual capacity. Phosphoric acid is produced by reacting finely ground phosphate rock with sulfuric acid. Phosphoric acid is the key building block for the production of high analysis or concentrated phosphate crop nutrients and animal feed products, and is the most comprehensive measure of phosphate capacity and production and a commonly used benchmark in our industry. Our U.S. phosphoric acid production totaled approximately 4.5 million tonnes during 2016. We account for approximately 10% of estimated global annual production and 61% of estimated North American annual output.

Our phosphate crop nutrient products are marketed worldwide to crop nutrient manufacturers, distributors, retailers and farmers. Our principal phosphate crop nutrient products are:

- Diammonium Phosphate (18-46-0) Diammonium Phosphate ("DAP") is the most widely used high-analysis phosphate crop nutrient worldwide. DAP is produced by first combining phosphoric acid with anhydrous ammonia in a reaction vessel. This initial reaction creates a slurry that is then pumped into a granulation plant where it is reacted with additional ammonia to produce DAP. DAP is a solid granular product that is applied directly or blended with other solid plant nutrient products such as urea and potash.
- Monoammonium Phosphate (11-52-0) Monoammonium Phosphate ("MAP") is the second most widely used high-analysis phosphate crop nutrient and the fastest growing phosphate product worldwide. MAP is also produced by first combining phosphoric acid with anhydrous ammonia in a reaction vessel. The resulting slurry is then pumped into the granulation plant where it is reacted with additional phosphoric acid to produce MAP. MAP is a solid granular product that is applied directly or blended with other solid plant nutrient products.
- MicroEssentials® is a value-added ammoniated phosphate product that is enhanced through a patented process that creates very thin platelets of sulfur and other micronutrients, such as zinc, on the granulated product. The patented process incorporates both the sulfate and elemental forms of sulfur, providing season-long availability to crops.

Production of our animal feed ingredients products is located at our New Wales, Florida facility. We market our feed phosphate primarily under the leading brand names of Biofos® and Nexfos®.

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Our primary phosphate crop nutrient production facilities are located in central Florida and Louisiana. The following map shows the locations of each of our phosphate concentrates plants in the United States and the locations of each of our active and planned phosphate mines in Florida, other than Ona as its reserves have been allocated to other active mines:

Annual capacity by plant as of December 31, 2016 and production volumes by plant for 2016 are listed below:

(tonnes in millions)	Phosphoric Acid		Processed Phosphate[(a)]/DAP/MAP/ MicroEssentials®/Feed Phosphate	
Facility	Operational Capacity[(b)]	Production[(c)]	Operational Capacity[(b)]	Production[(c)]
Florida:				
Bartow	0.9	1.0	2.2	2.2
New Wales	1.7	1.4	4.1	2.9
Riverview	0.9	0.8	1.8	1.6
Plant City	1.0	0.7	2.0	1.4
	4.5	3.9	10.1	8.1
Louisiana:				
Faustina	—	—	1.6	1.4
Uncle Sam	0.8	0.6	—	—
	0.8	0.6	1.6	1.4
Total	5.3	4.5	11.7	9.5

(a) Our ability to produce processed phosphates has been less than our annual operational capacity stated in the table above, except to the extent we purchase phosphoric acid. Factors affecting actual production are described in note (c) below.

(b) Operational capacity is our estimated long-term capacity based on an average amount of scheduled down time, including maintenance and scheduled turnaround time, and product mix, and no significant modifications to operating conditions, equipment or facilities.

(c) Actual production varies from annual operational capacity shown in the above table due to factors that include among others the level of demand for our products, maintenance and turnaround time, accidents, mechanical failure, product mix, and other operating conditions.

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The phosphoric acid produced at Uncle Sam is shipped to Faustina, where it is used to produce DAP, MAP and MicroEssentials®. Our Faustina plant also manufactures ammonia that is mostly consumed in our concentrate plants. We produced approximately 8.9 million tonnes of concentrated phosphate crop nutrients during 2016 and accounted for approximately 14% of estimated world annual output and 75% of estimated North American annual production.

Phosphate Rock

Phosphate rock is the key mineral used to produce phosphate crop nutrients and feed phosphate. Our phosphate rock production totaled approximately 14.2 million tonnes in 2016 and accounted for approximately 7% of estimated world annual production and 54% of estimated North American annual production. We are the world's second largest miner of phosphate rock and currently operate four mines with a combined annual capacity of approximately 17.2 million tonnes. Production of one tonne of DAP requires between 1.6 and 1.7 tonnes of phosphate rock.

All of our wholly owned phosphate mines and related mining operations are located in central Florida. During 2016, we operated four active mines: Four Corners, South Fort Meade, Wingate and South Pasture. The Hookers Prairie mine's reserves were exhausted during 2014. We plan to develop Ona and DeSoto reserves to replace reserves that will be depleted at various times during the next decade.

The phosphate deposits of Florida are of sedimentary origin and are part of a phosphate-bearing province that extends from southern Florida north along the Atlantic coast into southern Virginia. Our active phosphate mines are primarily located in what is known as the Bone Valley Member of the Peace River Formation in the Central Florida Phosphate District. The southern portions of the Four Corners and Wingate mines are in what is referred to as the Undifferentiated Peace River Formation, in which the Ona and DeSoto reserves we plan to develop are also located. Phosphate mining has been conducted in the Central Florida Phosphate District since the late 1800's. The potentially mineable portion of the district encompasses an area approximately 80 miles in length in a north-south direction and approximately 40 miles in width.

We extract phosphate ore using large surface mining machines that we own called "draglines." Prior to extracting the ore, the draglines must first remove a 10 to 50 foot layer of sandy overburden. At our Wingate mine, we also utilize dredges to remove the overburden and mine the ore. We then process the ore at beneficiation plants that we own at each active mine where the ore goes through washing, screening, sizing and flotation processes designed to separate the phosphate rock from sands, clays and other foreign materials. Prior to commencing operations at any of our planned future mines, we may need to acquire new draglines or move existing draglines to the mines and, unless the beneficiation plant at an existing mine were used, construct a beneficiation plant.

The following table shows, for each of our phosphate mines, annual capacity as of December 31, 2016 and rock production volume and grade for the years 2016, 2015, and 2014:

(tonnes in millions)	Annual Operational	2016			2015			2014		
Facility	Capacity[(a)(b)]	Production[(b)]	Average BPL[(c)]	% P2O5[(d)]	Production[(b)]	Average BPL[(c)]	% P2O5[(d)]	Production[(b)]	Average BPL[(c)]	% P2O5[(d)]
Four Corners	7.0	5.3	63.2	28.9	5.7	63.6	29.1	5.4	63.8	29.2
South Fort Meade	5.5	4.2	63.0	28.8	4.3	62.2	28.5	4.1	61.6	28.2
Hookers Prairie[(e)]	—	—	—	—	—	—	—	0.8	64.8	29.8
South Pasture[(f)]	3.2	3.4	62.5	28.6	3.3	61.4	28.1	2.6	60.9	27.9
Wingate	1.5	1.3	63.1	28.9	1.2	63.9	29.2	1.1	63.8	29.2
Total	17.2	14.2	63.0	28.8	14.5	62.7	28.7	14.0	62.7	28.7

(a) Annual operational capacity is the expected average long-term annual capacity considering constraints represented by the grade, quality and quantity of the reserves being mined as well as equipment performance and other operational factors.

(b) Actual production varies from annual operational capacity shown in the above table due to factors that include among others the level of demand for our products, the quality of the reserves, the nature of the geologic formations we are

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mining at any particular time, maintenance and turnaround time, accidents, mechanical failure, weather conditions, and other operating conditions, as well as the effect of recent initiatives intended to improve operational excellence.

(c) Bone Phosphate of Lime ("BPL") is a traditional reference to the amount (by weight percentage) of calcium phosphate contained in phosphate rock or a phosphate ore body. A higher BPL corresponds to a higher percentage of calcium phosphate.

(d) The percent of P2O5 in the above table represents a measure of the phosphate content in phosphate rock or a phosphate ore body. A higher percentage corresponds to a higher percentage of phosphate content in phosphate rock or a phosphate ore body.

(e) The Hookers Prairie mine's reserves were exhausted during 2014.

(f) Production at the South Pasture mine in 2014 reflects rock mined from March of 2014, when the mine was acquired.

Reserves

We estimate our phosphate rock reserves based upon exploration core drilling as well as technical and economic analyses to determine that reserves can be economically mined. Proven (measured) reserves are those resources of sufficient concentration to meet minimum physical, chemical and economic criteria related to our current product standards and mining and production practices. Our estimates of probable (indicated) reserves are based on information similar to that used for proven reserves, but sites for drilling are farther apart or are otherwise less adequately spaced than for proven reserves, although the degree of assurance is high enough to assume continuity between such sites. Proven reserves are determined using a minimum drill hole spacing in two locations per 40 acre block. Probable reserves have less than two drill holes per 40 acre block, but geological data provides a high degree of assurance that continuity exists between sites.

The following table sets forth our proven and probable phosphate reserves as of December 31, 2016:

(tonnes in millions)	Reserve Tonnes (a)(b)(c)		Average BPL(d)	% P_2O_5
Active Mines				
Four Corners	91.2		64.3	29.4
South Fort Meade	23.3		62.7	28.7
South Pasture	148.0		63.2	28.9
Wingate	30.0		63.0	28.8
Total Active Mines	292.5		63.5	29.0
Planned Mining				
Ona(f)	110.9		65.1	29.8
DeSoto	151.1	(e)	63.9	29.2
Total Planned Mining	262.0		64.4	29.5
Total Mining	554.5		63.9	29.2

(a) Reserves are in areas that are fully accessible for mining; free of surface or subsurface encumbrance, legal setbacks, wetland preserves and other legal restrictions that preclude permittable access for mining; believed by us to be permittable; and meet specified minimum physical, economic and chemical criteria related to current mining and production practices.

(b) Reserve estimates are generally established by our personnel without a third party review. There has been no third party review of reserve estimates within the last five years. The reserve estimates have been prepared in accordance with the standards set forth in Industry Guide 7 promulgated by the United States Securities and Exchange Commission ("SEC").

(c) Of the reserves shown, 523.7 million tonnes are proven reserves, while probable reserves totaled 30.8 million tonnes.

(d) Average product BPL ranges from approximately 63% to 65%.

(e) In connection with the purchase in 1996 of approximately 111.1 million tonnes of the reported DeSoto reserves, we agreed to (i) pay royalties of between \$0.50 and \$0.90 per ton of rock mined based on future levels of DAP margins, and (ii) pay to the seller lost income from the loss of surface use to the extent we use the property for mining related purposes before January 1, 2020.

(f) The Ona reserves have been allocated to our Four Corners and South Pasture mines as they will be mined from those locations.

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We generally own the reserves shown for active mines in the table above, with the only significant exceptions being further described below:

- We own the above-ground assets of the South Fort Meade mine, including the beneficiation plant, rail track and the initial clay settling areas. A limited partnership, South Ft. Meade Partnership, L.P. (“SFMP”), owns the majority of the mineable acres shown in the table for the South Fort Meade mine.
- We currently have a 95% economic interest in the profits and losses of SFMP. SFMP is included as a consolidated subsidiary in our financial statements.
- We have a long-term mineral lease with SFMP. This lease expires on the earlier of December 31, 2025 or on the date that we have completed mining and reclamation obligations associated with the leased property. Lease provisions include royalty payments and a commitment to give mining priority to the South Fort Meade phosphate reserves. We pay the partnership a royalty on each BPL short ton mined and shipped from the areas that we lease from it. Royalty payments to SFMP normally average approximately $14 million annually.
- Through its arrangements with us, SFMP also earns income from mineral lease payments, agricultural lease payments and interest income, and uses those proceeds primarily to pay dividends to its equity owners.
- The surface rights to approximately 902 acres for the South Fort Meade Mine are owned by SFMP, while the U.S. government owns the mineral rights beneath. We control the rights to mine these reserves under a mining lease agreement and pay royalties on the tonnage extracted. Under the lease, we paid $1.1 million in royalties to the U.S. Government in 2016.

In light of the long-term nature of our rights to our reserves, we expect to be able to mine all reported reserves that are not currently owned prior to termination or expiration of our rights. Additional information regarding permitting is included in Part I, Item 1A, “Risk Factors”, and under “Environmental, Health, Safety and Security Matters—Operating Requirements and Impacts—Permitting” in our Management’s Analysis.

Investments in Joint Ventures

We have a 35% economic interest in a joint venture which owns the Miski Mayo phosphate rock mine in the Bayovar region of Peru. Our investment in the Miski Mayo Mine and related commercial offtake supply agreement to purchase a share of the phosphate rock from the Miski Mayo Mine allows us to supplement our internally produced rock to meet our overall fertilizer production needs. The Miski Mayo Mine’s annual production capacity is 3.9 million tonnes. Upon the closing of our proposed acquisition of Vale Fertilizantes S.A. we will acquire an additional 40% economic interest in the Miski Mayo joint venture, which will bring our aggregate interest to 75%.

We own a 25% interest in MWSPC and in connection with our equity share, we will market approximately 25% of the MWSPC's production. MWSPC is developing a mine and two chemical complexes that are presently expected to produce phosphate fertilizers and other downstream phosphates products in the Kingdom of Saudi Arabia. We currently estimate that the cost to develop and construct the integrated phosphate production facilities (the "Project") will approximate $8.0 billion, which we expect to be funded primarily through investments by us, Ma'aden and SABIC, and through borrowing arrangements and other external project financing facilities ("Funding Facilities"). We currently estimate that our cash investment in the Project, including the amount we have invested to date, will approximate $850 million. Our cash investment in the Project at December 31, 2016 and as of the date of this report was $707 million. We expect our future cash contributions to be approximately $143 million. The greenfield project is being built in the northern region of Saudi Arabia at Wa’ad Al Shamal Minerals Industrial City, and includes further expansion of processing plants in Ras Al Khair Minerals Industrial City, which is located on the east coast of Saudi Arabia. The facilities are expected to have a production capacity of approximately 3.5 million tonnes of finished product per year. The Project is expected to benefit from the availability of key raw nutrients from sources within Saudi Arabia. Ammonia operations commenced in late 2016 and production of finished phosphate products is expected to begin in 2017.

On June 30, 2014, MWSPC entered into Funding Facilities with a consortium of 20 financial institutions for a total amount of approximately $5.0 billion. In January 2016, MWSPC announced that it had received the approval of the Saudi Industrial Development Fund ("SIDF") for future Funding Facilities in the total amount of approximately $1.1 billion, subject to the finalization of definitive agreements. We currently expect that MWSPC will work to finalize definitive agreements for loans from SIDF in the lower amount of approximately $560 million by April 30, 2017. The terms of the June 30, 2014 Funding Facilities and the proposed future Funding Facilities are further discussed in Note 8 of our Consolidated Financial Statements.

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Sulfur

We use molten sulfur at our phosphates concentrates plants to produce sulfuric acid primarily for use in our production of phosphoric acid. We purchased approximately 4.2 million long tons of sulfur during 2016. We purchase the majority of this sulfur from North American oil and natural gas refiners who are required to remove or recover sulfur during the refining process. Production of one tonne of DAP requires approximately 0.40 long tons of sulfur. We procure our sulfur from multiple sources and receive it by truck, rail, barge and vessel, either direct to our phosphate plants or have it sent for gathering to terminals that are located on the U.S. gulf coast. The new sulfur melter at our New Wales facility became operational in the first quarter of 2016 and with the melter we are now able to purchase formed sulfur, which is more broadly available than molten sulfur. Formed sulfur for the melter is received through two Tampa ports, then delivered by truck to the New Wales facility. The sulfur melter has the capability to melt over one million long tons of sulfur annually, allowing us to leverage economic benefits within the global sulfur marketplace.

We own and operate sulfur terminals in Houston, Texas and Riverview, Florida. We also lease terminal space in Tampa, Florida and Galveston and Beaumont, Texas. We contract for the operation of three ocean-going barges and three tugs that transport molten sulfur from the Texas terminals to Tampa and then onward by truck to our Florida phosphate plants. In addition, we own a 50% equity interest in Gulf Sulphur Services Ltd., LLLP ("Gulf Sulphur Services"), which is operated by our joint venture partner. Gulf Sulphur Services has a sulfur transportation and terminaling business in the Gulf of Mexico, and handles these functions for a substantial portion of our Florida sulfur volume. Our sulfur logistic assets also include a large fleet of leased railcars that supplement our marine sulfur logistic system. Our Louisiana operations are served by truck and barge from nearby refineries.

Although sulfur is readily available from many different suppliers and can be transported to our phosphate facilities by a variety of means, sulfur is an important raw material used in our business that has in the past been and may in the future be the subject of volatile pricing and availability. Alternative transportation and terminaling facilities might not have sufficient capacity to fully serve all of our facilities in the event of a disruption to current transportation or terminaling facilities. Changes in the price of sulfur or disruptions to sulfur transportation or terminaling facilities could have a material impact on our business. We have included a discussion of sulfur prices in our Management's Analysis.

Ammonia

We use ammonia together with phosphoric acid to produce DAP, MAP and MicroEssentials®. We consumed approximately 1.5 million tonnes of ammonia during 2016. Production of one tonne of DAP requires approximately 0.23 tonnes of ammonia.

Our Florida ammonia needs are currently supplied under multi-year contracts with both domestic and offshore producers. Ammonia for our New Wales and Riverview plants is terminaled through an owned ammonia facility at Port Sutton, Florida. Ammonia for our Bartow plant is terminaled through another ammonia facility owned and operated by a third party at Port Sutton, Florida pursuant to an agreement that provides for service through 2019 with automatic renewal for an additional two-year period unless either party terminates as provided in the agreement. Ammonia is transported by pipeline from the terminals to our production facilities. We have service agreements with the operators of the pipelines for Bartow, New Wales, and Riverview, which provide service through June 30, 2017; the service agreements may be extended in one year increments unless either party objects. Ammonia for our Plant City facility is terminaled through an owned facility in Tampa, Florida, that was acquired as part of the CF Phosphate Assets Acquisition. This ammonia is transported by rail via leased railcars. The leases for rail cars expire in 2017, 2018 and 2019.

In 2013, we entered into an ammonia supply agreement with CF (the "CF Ammonia Supply Agreement") that commenced in 2017, under which Mosaic agreed to purchase approximately 545,000 to 725,000 tonnes of ammonia per year during a term that may extend until December 31, 2032 at a price tied to the prevailing price of U.S. natural gas. For 2017, our remaining minimum purchase obligation is approximately 410,000 tonnes following our entry into a separate arrangement with CF under which we were deemed to have purchased approximately 135,000 tonnes in exchange for providing ammonia storage space and use of related terminal facilities to CF. A specialized tug and barge unit is currently under construction for use in transporting the ammonia and is expected to be operational in the second half of 2017. Additional information about the unit and its financing is provided in Note 16 of our Consolidated Financial Statements. Upon completion of the unit, we expect a majority of the ammonia purchased under the CF Ammonia Supply Agreement to be received by barge at the port of Tampa and delivered to our Florida facilities as described in the preceding paragraph. While the market prices of natural gas and

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ammonia have changed since we executed this agreement in 2013, we continue to expect that the agreement will provide us a competitive advantage over its term, including by providing a reliable long-term ammonia supply.
We produce ammonia at Faustina, Louisiana primarily for our own consumption. Our annual capacity is approximately 500,000 tonnes. From time to time we sell surplus ammonia to unrelated parties. In addition, under certain circumstances we are permitted to receive ammonia at Faustina under the CF Ammonia Supply Agreement.
Although ammonia is readily available from many different suppliers and can be transported to our phosphates facilities by a variety of means, ammonia is an important raw material used in our business that has in the past been and may in the future be the subject of volatile pricing, and alternative transportation and terminaling facilities might not have sufficient capacity to fully serve all of our facilities in the event of a disruption to existing transportation or terminaling facilities. Changes in the price of ammonia or disruptions to ammonia transportation or terminaling could have a material impact on our business. We have included a discussion of ammonia prices in our Management's Analysis.

Natural Gas for Phosphates

Natural gas is the primary raw material used to manufacture ammonia. At our Faustina facility, ammonia is manufactured on site. The majority of natural gas is purchased through firm delivery contracts based on published index-based prices and is sourced from Texas and Louisiana via pipelines interconnected to the Henry Hub. We use over-the-counter swap and/or option contracts to forward price portions of future gas purchases. We typically purchase approximately 18 million MMbtu of natural gas per year for use in ammonia production at Faustina.
Our ammonia requirements for our Florida operations are purchased rather than manufactured on site, so while we typically purchase approximately two million MMbtu of natural gas per year in Florida, it is only used as a thermal fuel for various phosphate production processes.

Florida Land Holdings

We are a significant landowner in the State of Florida, which has in the past been considered one of the fastest areas of population growth in the United States. We own land comprising over 290,000 acres held in fee simple title in central Florida, and have the right to mine additional properties which contain phosphate rock reserves. Some of our land holdings are needed to operate our Phosphates business, while a portion of our land assets, such as certain reclaimed properties, are no longer required for our ongoing operations. As a general matter, more of our reclaimed property becomes available for uses other than for phosphate operations each year. Our real property assets are generally comprised of concentrates plants, port facilities, phosphate mines and other property which we have acquired through our presence in Florida. Our long-term future land use strategy is to optimize the value of our land assets. For example, we developed Streamsong Resort® (the "Resort"), a destination resort and conference center, in an area of previously mined land as part of our long-term business strategy to maximize the value and utility of our extensive land holdings in Florida. In addition to the two golf courses and clubhouse that were opened in December 2012, the Resort and conference center opened in January 2014. In 2015, in response to market demand, we began construction of a third golf course and ancillary facilities, which are expected to be completed in 2017.

Potash Segment

We are one of the leading potash producers in the world. We mine and process potash in Canada and the United States and sell potash in North America and internationally. The term "potash" applies generally to the common salts of potassium. Muriate of potash ("MOP") is the primary source of potassium for the crop nutrient industry. Red MOP has traces of iron oxide. The granular and standard grade Red MOP products are well suited for direct fertilizer application and bulk blending. White MOP has a higher percent potassium oxide ("K2O"). White MOP, besides being well suited for the agricultural market, is used in many industrial applications. We also produce a double sulfate of potash magnesia product, which we market under our brand name K-Mag®, at our Carlsbad, New Mexico facility.
Our potash products are marketed worldwide to crop nutrient manufacturers, distributors and retailers and are also used in the manufacturing of mixed crop nutrients and, to a lesser extent, in animal feed ingredients. We also sell potash to customers for industrial use. In addition, our potash products are used for de-icing and as a water softener regenerant.
In 2016, we operated three potash mines in Canada, including two shaft mines with a total of three production shafts and one solution mine, as well as one potash shaft mine in the United States. We also own related refineries at each of

the mines.
We continue the expansion of capacity in our Potash segment with the K3 shafts at our Esterhazy mine, which are expected to begin mining potash ore in 2017 and following ramp-up to add an estimated 0.9 million tonnes to our annual potash

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operational capacity. This will provide for an infrastructure to move ore from K3 to the K1 and K2 mills, giving us the flexibility to optimize production at K1, K2 and K3 in order to mitigate risk from current and future brine inflows.

It is possible that the costs of remedial efforts at Esterhazy may further increase in the future and that such an increase could be material, or, in the extreme scenario, that the brine inflows, risk to employees or remediation costs may increase to a level which would cause us to change our mining processes or abandon the mines. See “Key Factors that can Affect Results of Operations and Financial Condition” and “Potash Net Sales and Gross Margin” in our Management’s Analysis and “Our Esterhazy mine has had an inflow of salt saturated brine for more than 30 years” in Part I, Item 1A, “Risk Factors” in this report, which are incorporated herein by reference, for a discussion of costs, risks and other information relating to the brine inflows.

The map below shows the location of each of our potash mines.

Our current potash annualized operational capacity totals 9.9 million tonnes of product per year and accounts for approximately 14% of world annual capacity and 43% of North American annual capacity. Production during 2016 totaled 7.6 million tonnes. We account for approximately 12% of estimated world annual production and 39% of estimated North American annual production.

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The following table shows, for each of our potash mines, annual capacity as of December 31, 2016 and volume of mined ore, average grade and finished product output for years 2016, 2015 and 2014:

(tonnes in millions)			2016			2015			2014		
Facility	Annualized Proven Peaking Capacity (a)(c)(d)	Annual Operational Capacity (a)(b)(d)(e)	Ore Mined	Grade % K2O[f]	Finished Product[b]	Ore Mined	Grade % K2O[f]	Finished Product[b]	Ore Mined	Grade % K2O[f]	Finished Product[b]
Canada											
Belle Plaine—MOP	2.8	2.4	9.0	18.0	2.4	8.0	18.0	2.1	8.4	18.0	2.2
Colonsay—MOP[h][i]	2.6	1.5	1.6	25.7	0.5	3.9	26.8	1.4	3.8	26.9	1.4
Esterhazy—MOP	6.3	5.3	12.6	24.4	4.2	13.1	23.7	4.3	12.4	23.8	4.0
Canadian Total	11.7	9.2	23.2	22.0	7.1	25.0	22.3	7.8	24.6	22.3	7.6
United States											
Carlsbad—MOP[g]	—	—	—	—	—	—	—	—	2.5	9.5	0.2
Carlsbad—K-Mag®[i]	0.9	0.7	2.7	5.4	0.5	2.2	5.8	0.6	1.7	5.5	0.4
United States Total	0.9	0.7	2.7	5.4	0.5	2.2	5.8	0.6	4.2	7.8	0.6
Totals	12.6	9.9	25.9	20.3	7.6	27.2	21.0	8.4	28.8	20.2	8.2

(a) Finished product.

(b) Actual production varies from annual operational capacity shown in the above table due to factors that include among others the level of demand for our products, maintenance and turnaround time, the quality of the reserves and the nature of the geologic formations we are mining at any particular time, accidents, mechanical failure, product mix, and other operating conditions.

(c) Represents full capacity assuming no turnaround or maintenance time.

(d) The annualized proven peaking capacity shown above is the capacity currently used to determine our share of Canpotex, Limited ("Canpotex") sales. Canpotex members' respective shares of Canpotex sales are based upon the members' respective proven peaking capacities for producing potash. When a Canpotex member expands its production capacity, the new capacity is added to that member's proven peaking capacity based on a proving run at the maximum production level. Alternatively, after January 2017, Canpotex members may elect to rely on an independent engineering firm and approved protocols to calculate their proven peaking capacity. The annual operational capacity reported in the table above can exceed the annualized proven peaking capacity until the proving run has been completed. Effective January 1, 2014, our share of Canpotex sales was 42.5%. Subsequently, one of Canpotex's other members demonstrated an increase in its capacity, which resulted in lowering our share of Canpotex sales to 38.8%, effective July 1, 2014. Effective January 1, 2015, our share of Canpotex sales increased to 40.6%, as a result of a proving run of our expansion of our Colonsay mine, which was successfully completed in 2014. Effective January 1, 2016, our share of Canpotex sales decreased to 38.1%, as Canpotex's other members demonstrated a change in capacity.

(e) Annual operational capacity is our estimated long term potash capacity based on the quality of reserves and the nature of the geologic formations expected to be mined, milled and/or processed over the long term, average amount of scheduled down time, including maintenance and scheduled turnaround time, and product mix, and no significant modifications to operating conditions, equipment or facilities. Operational capacities will continue to be updated to the extent new production results impact ore grades assumptions.

(f) Grade % K2O is a traditional reference to the percentage (by weight) of potassium oxide contained in the ore. A higher percentage corresponds to a higher percentage of potassium oxide in the ore.

(g) Effective December 28, 2014, we permanently discontinued production of MOP at our Carlsbad facility.

(h) In July 2016, we temporarily idled our Colonsay, Saskatchewan potash mine for the remainder of 2016 in light of reduced customer demand while adapting to challenging potash market conditions. We resumed production in January 2017.

(i) We have the ability to reach an annual operating capacity of 2.1 million tonnes over time by increasing our staffing levels and investment in mine development activities.

(j) K-Mag® is a specialty product that we produce at our Carlsbad facility. In 2014, we reduced our annual operational capacity of our K-Mag® due to lower ore grades.

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Canadian Mines

We operate three Canadian potash facilities all located in the southern half of the Province of Saskatchewan, including our solution mine at Belle Plaine, two interconnected mine shafts at our Esterhazy shaft mine and our shaft mine at Colonsay.

Extensive potash deposits are found in the southern half of the Province of Saskatchewan. The potash ore is contained in a predominantly rock salt formation known as the Prairie Evaporites. The Prairie Evaporites deposits are bounded by limestone formations and contain the potash beds. Three potash deposits of economic importance occur in Saskatchewan: the Esterhazy, Belle Plaine and Patience Lake members. The Patience Lake member is mined at Colonsay, and the Esterhazy member at Esterhazy. At Belle Plaine all three members are mined. Each of the major potash members contains several potash beds of different thicknesses and grades. The particular beds mined at Colonsay and Esterhazy have a mining height of 11 and 8 feet, respectively. At Belle Plaine several beds of different thicknesses are mined.

Our potash mines in Canada produce MOP exclusively. Esterhazy and Colonsay utilize shaft mining while Belle Plaine utilizes solution mining technology. Traditional potash shaft mining takes place underground at depths of over 1,000 meters where continuous mining machines cut out the ore face and load it onto conveyor belts. The ore is then crushed, moved to storage bins and hoisted to refineries above ground. In contrast, our solution mining process involves heated brine, which is pumped through a “cluster” to dissolve the potash in the ore beds at a depth of approximately 1,500 meters. A cluster consists of a series of boreholes drilled into the potash ore. A separate distribution center at each cluster controls the brine flow. The solution containing dissolved potash and salt is pumped to a refinery where sodium chloride, a co-product of this process, is separated from the potash through the use of evaporation and crystallization techniques. Concurrently, the solution is pumped into a cooling pond where additional crystallization occurs and the resulting product is recovered via a floating dredge. Refined potash is dewatered, dried and sized. Our Canadian operations produce 13 different MOP products, including industrial grades, many through proprietary processes.

Our potash mineral rights in the Province of Saskatchewan consist of the following:

	Belle Plaine	Colonsay	Esterhazy	Total
Acres under control				
Owned in fee	15,236	10,845	113,514	139,595
Leased from Province	53,132	114,133	195,536	362,801
Leased from others	—	3,518	78,958	82,476
Total under control	68,368	128,496	388,008	584,872

We believe that our mineral rights in Saskatchewan are sufficient to support current operations for more than a century. Leases are generally renewable at our option for successive terms, generally 21 years each, except that certain of the acres shown above as “Leased from others” are leased under long-term leases with terms (including renewals at our option) that expire from 2023 to 2170.

We pay Canadian resource taxes consisting of the Potash Production Tax and resource surcharge. The Potash Production Tax is a Saskatchewan provincial tax on potash production and consists of a base payment and a profits tax. We also pay a percentage of the value of resource sales from our Saskatchewan mines. In addition to the Canadian resource taxes, royalties are payable to the mineral owners in respect of potash reserves or production of potash. We have included a further discussion of the Canadian resource taxes and royalties in our Management’s Analysis.

Since December 1985, we have effectively managed an inflow of salt saturated brine into our Esterhazy mine. At various times since then, we have experienced changing amounts and patterns of brine inflows at Esterhazy. To date, the brine inflow, including our remediation efforts to control it, has not had a material impact on our production processes or volumes. The volume of the net brine inflow (the rate of inflow less the amount we are pumping out of the mine) or net outflow (when we are pumping more brine out of the mine than the rate of inflow) fluctuates and is dependent on a number of variables, such as the location of the source of the inflow; the magnitude of the inflow; available pumping, surface and underground brine storage capacities; underground injection well capacities, and the effectiveness of calcium chloride and cementatious grout used to reduce or prevent the inflows, among other factors.

As a result of these brine inflows, we incur expenditures, certain of which have been capitalized and others that have been charged to expense, in accordance with accounting principles generally accepted in the United States of America.

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It is possible that the costs of remedial efforts at Esterhazy may further increase in the future and that such an increase could be material, or, in the extreme scenario, that the brine inflows, risk to employees or remediation costs may increase to a level which would cause us to change our mining processes or abandon the mine. See “Key Factors that can Affect Results of Operations and Financial Condition” and “Potash Net Sales and Gross Margin” in our Management’s Analysis and “Our Esterhazy mine has had an inflow of salt saturated brine for more than 30 years” in Part I, Item 1A, “Risk Factors” in this report, which are incorporated herein by reference, for a discussion of costs, risks and other information relating to the brine inflows. The K3 shafts at our Esterhazy mine are part of our potash expansion plan, which is also designed to mitigate risk from current and future inflows.

Due to the ongoing brine inflow at Esterhazy, subject to exceptions that are limited in scope and amount, we are unable to obtain insurance coverage for underground operations for water incursion problems. Like other potash producers’ shaft mines, our Colonsay, Saskatchewan, and Carlsbad, New Mexico, mines are also subject to the risks of inflow of water as a result of their shaft mining operations, but water inflow risks at these mines are included in our insurance coverage subject to deductibles, limited coverage terms and lower sub-limits negotiated with our insurers.

United States Mine

In the United States, we have a shaft mine located in Carlsbad, New Mexico. The ore reserves at our Carlsbad mine are made up of langbeinite, a double sulfate of potassium and magnesium. This type of potash reserve occurs in a predominantly rock salt formation known as the Salado Formation. The McNutt Member of this formation consists of eleven units of economic importance, of which we currently mine one. The McNutt Member’s evaporite deposits are interlayered with anhydrite, polyhalite, potassium salts, clay, and minor amounts of sandstone and siltstone.

Continuous underground mining methods are utilized to extract the ore. Drum type mining machines are used to cut the langbeinite ore from the face. Mined ore is then loaded onto conveyors, transported to storage areas, and then hoisted to the surface for further processing at our refinery.

Effective January 1, 2015, we only produce a double sulfate of potash magnesia product, which we market under our brand name K-Mag®, at our Carlsbad facility. Prior to 2015, we also produced MOP at this facility.

At the Carlsbad facility, we mine and refine potash from 77,141 acres of mineral rights. We control these reserves pursuant to either (i) leases from the U.S. government that, in general, continue in effect at our option (subject to readjustment by the U.S. government every 20 years) or (ii) leases from the State of New Mexico that continue as long as we continue to produce from them. These reserves contain an estimated total of 161 million tonnes of potash mineralization (calculated after estimated extraction losses) in one mining bed evaluated at thicknesses ranging from 5.5 feet to in excess of 11 feet. At average refinery rates, these ore reserves are estimated to be sufficient to yield 32 million tonnes of langbeinite concentrates with an average grade of approximately 21% K2O. At projected rates of production, we estimate that Carlsbad’s reserves of langbeinite are sufficient to support operations for approximately 48 years.

Royalties for the U.S. operations amounted to approximately $6.7 million in 2016. These royalties are established by the U.S. Department of the Interior, Bureau of Land Management, in the case of the Carlsbad leases from the U.S. government, and pursuant to provisions set forth in the leases, in the case of the Carlsbad state leases.

Reserves

Our estimates below of our potash reserves and non-reserve potash mineralization are based on exploration drill hole data, seismic data and actual mining results over more than 35 years. Proven reserves are estimated by identifying material in place that is delineated on at least two sides and material in place within a half-mile radius or distance from an existing sampled mine entry or exploration core hole. Probable reserves are estimated by identifying material in place within a one mile radius from an existing sampled mine entry or exploration core hole. Historical extraction ratios from the many years of mining results are then applied to both types of material to estimate the proven and probable reserves. We believe that all reserves and non-reserve potash mineralization reported below are potentially recoverable using existing production shaft and refinery locations.

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Our estimated recoverable potash ore reserves and non-reserve potash mineralization as of December 31, 2016 for each of our mines are as follows:

(tonnes of ore in millions)	Reserves[(a)(b)]		Potash Mineralization[(a)(c)]
Facility	Recoverable Tonnes	Average Grade (% K2O)	Potentially Recoverable Tonnes
Canada			
Belle Plaine	783	18.0	2,432
Colonsay	235	26.4	476
Esterhazy	852	24.4	672
sub-totals	1,870	22.0	3,580
United States			
Carlsbad	161	5.0	—
Totals	2,031	20.6	3,580

(a) There has been no third party review of reserve estimates within the last five years. The reserve estimates have been prepared in accordance with the standards set forth in Industry Guide 7 promulgated by the SEC.

(b) Includes 1.2 billion tonnes of proven reserves and 0.8 billion tonnes of probable reserves.

(c) The non-reserve potash mineralization reported in the table in some cases extends to the boundaries of the mineral rights we own or lease. Such boundaries are up to 16 miles from the closest existing sampled mine entry or exploration core hole. Based on available geologic data, the non-reserve potash mineralization represents potash that we expect to mine in the future, but it may not meet all of the technical requirements for categorization as proven or probable reserves under Industry Guide 7.

As discussed more fully above, we either own the reserves and mineralization shown above or lease them pursuant to mineral leases that generally remain in effect or are renewable at our option, or are long-term leases. Accordingly, we expect to be able to mine all reported reserves that are leased prior to termination or expiration of the existing leases.

Natural Gas

Natural gas is used at our Belle Plaine solution mine as a fuel to produce steam and to dry potash products. The steam is used to generate electricity and provide thermal energy to the evaporation, crystallization and solution mining processes. The Belle Plaine solution mine typically accounts for approximately 79% of our Potash segment's total natural gas requirements for potash production. At our shaft mines, natural gas is used as a fuel to heat fresh air supplied to the shaft mines and for drying potash products. Combined natural gas usage for both the solution and shaft mines totaled 17 million MMbtu during 2016. We purchase our natural gas requirements on firm delivery index price-based physical contracts and on short term spot-priced physical contracts. Our Canadian operations purchase all of their physical gas in Saskatchewan using AECO price indices references and transport the gas to our plants via the TransGas pipeline system. The U.S. potash operation in New Mexico purchases physical gas in the southwest respective regional market using the TransWestern El Paso Permian Basin market pricing reference. We use financial derivative contracts to manage the pricing on portions of our natural gas requirements.

International Distribution Segment

Our International Distribution segment markets phosphate-, potash- and nitrogen-based crop nutrients and animal feed ingredients and provides other ancillary services to wholesalers, cooperatives, independent retailers, and farmers in South America and the Asia-Pacific regions. In 2016, our International Distribution segment purchased 2.2 million tonnes of phosphate-based products from our Phosphates segment and 2.0 million tonnes of potash products from our Potash segment and Canpotex. Our international distribution operations also purchase phosphates, potash and nitrogen products from unrelated third parties, which we either use to produce blended crop nutrients ("Blends") or for resale. Our International Distribution segment provides our Phosphates and Potash segments access to key markets outside of North America.

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Our International Distribution segment’s production facilities include blending plants and an SSP plant that produces crop nutrients by mixing sulfuric acid with phosphate rock. A blending plant combines several crop nutrient products to make a mixture tailored to specific crop requirements. We lease various warehouses depending on sales and production levels.

The following maps show the locations of our primary International Distribution segment operations in South America and Asia:

International Distribution - South America Operations

We are one of the largest producers and distributors of blended crop nutrients for agricultural use in Brazil. We own and operate twelve blending plants in Brazil and one blending plant and port in Paraguay. In addition, we lease several other warehouses and blending units depending on sales and production levels. We also have a 62% ownership interest in Fospar, S.A. (“Fospar”). Fospar owns and operates an SSP granulation plant and a deep-water crop nutrition port and throughput warehouse terminal facility in Paranagua, Brazil. Together these plants provide the capability to annually distribute approximately 6.0 million tonnes of crop nutrients in Brazil and Paraguay. The port facility at Paranagua handles approximately 2.6 million tonnes of imported crop nutrients. In 2016 we sold approximately 5.7 million tonnes of crop nutrient products in South America.

In 2015 we completed the integration of our December 2014 purchase of ADM's fertilizer distribution business in Brazil and Paraguay. In connection with the acquisition, we also negotiated the terms of five-year fertilizer supply agreements, whereby we supply ADM's fertilizer needs in Brazil and Paraguay.

On December 19, 2016, we entered into an agreement to acquire Vale S.A.'s global phosphate and potash operations conducted through Vale Fertilizantes S.A. for a purchase price valued at $2.5 billion, consisting of $1.25 billion in cash and 42,286,874 shares of Mosaic common stock. Upon closing the acquisition, Mosaic expects to become the leading fertilizer production and distribution company in Brazil. This transaction is expected to close in late 2017 and remains subject to the satisfaction of closing conditions. Additional information about the proposed transaction is provided in Note 24 to our Consolidated Financial Statements.

International Distribution - Asia-Pacific Operations

In China, we own two 300,000-tonne per year capacity blending plants. In 2016, we sold our 35% interest in a joint venture of a DAP production plant. In 2016, we sold approximately 230,000 tonnes of blends and distributed another 310,000 tonnes of phosphate and potash crop nutrients in China.

In India, we have distribution facilities to import and sell crop nutrients. In 2016, we distributed approximately 590,000 tonnes of phosphate and potash crop nutrients in India. We also serve as a marketing agent for our Phosphates segment.

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SALES AND DISTRIBUTION ACTIVITIES

United States and Canada

We have a United States and Canada sales and marketing team that serves our business segments. We sell to wholesale distributors, retail chains, cooperatives, independent retailers and national accounts.

Customer service and the ability to effectively minimize the overall supply chain costs are key competitive factors in the crop nutrient and animal feed ingredients businesses. In addition to our production facilities, to service the needs of our customers, we own, lease or have contractual throughput or other arrangements at strategically located distribution warehouses along or near the Mississippi and Ohio Rivers as well as in other key agricultural regions of the United States and Canada. From these facilities, we distribute Mosaic-produced phosphate and potash products for customers who in turn resell the product into the distribution channel or directly to farmers in the United States and Canada.

We own port facilities in Tampa, Florida and Houston, Texas, which have deep water berth capabilities providing access to the Gulf of Mexico. We will discontinue operations at the Houston, Texas facility in 2017 and then expect to sell the facility. We also own warehouse distribution facilities in Savage, Minnesota; Pekin, Illinois; and Henderson, Kentucky.

In addition to the geographically situated facilities that we own, our U.S. distribution operations also include leased distribution space or contractual throughput agreements in other key geographical areas such as California, Florida, Illinois, Indiana, Iowa, Kentucky, Louisiana, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, Texas and Wisconsin.

Our Canadian customers include independent dealers and national accounts. We also lease and own warehouse facilities in Saskatchewan, Ontario, Quebec and Manitoba in Canada.

International

Outside of the United States and Canada, we market our Phosphates segment's products through our International Distribution segment as well as a salesforce focused on geographies outside of North America. The countries that account for the largest amount of our phosphates sales outside the United States, by volume, are Brazil, Canada, India, Australia and Mexico.

Our sales outside of the United States and Canada of Saskatchewan potash products are made through Canpotex. Canpotex sales are allocated among its members based on peaking capacity. Effective January 1, 2016, our share of Canpotex sales decreased to 38.1% from 40.6%, as Canpotex's other members demonstrated a change in capacity.

Our potash exports from Carlsbad are sold through our own sales force. We also market our Potash segment’s products through our International Distribution segment, which acquires potash primarily through Canpotex. The countries that account for the largest amount of international potash sales, by volume, are Brazil, China, Indonesia, India and Malaysia.

To service the needs of our customers, our International Distribution segment includes a network of strategically located sales offices, crop nutrient blending and bagging facilities, port terminals and warehouse distribution facilities that we own and operate in key geographic areas throughout several countries. The blending and bagging facilities primarily produce Blends from phosphate, potash and nitrogen. The average product mix in our Blends (by volume) contains approximately 50% phosphate, 35% potash and 15% nitrogen, although this mix differs based on seasonal and other factors. Our International Distribution segment's operations serve primarily as a sales outlet for our North American Phosphates production, both for resale and as an input for Blends. Our Potash segment also has historically furnished the majority of the raw materials needs for the production of Blends, primarily via Canpotex, and is expected to continue to do so in the future.

Other Products

With a strong brand position in a multi-billion dollar animal feed ingredients global market, our Phosphates segment supplies animal feed ingredients for poultry and livestock to customers in North America, Latin America and Asia.

Our potash sales to non-agricultural users are primarily to large industrial accounts and the animal feed industry. Additionally, we sell potash for de-icing and as a water softener regenerant, as well as fluorosilicic acid for water fluoridation.

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COMPETITION

Because crop nutrients are global commodities available from numerous sources, crop nutrition companies compete primarily on the basis of delivered price. Other competitive factors include product quality, cost and availability of raw materials, customer service, plant efficiency and availability of product. As a result, markets for our products are highly competitive. We compete with a broad range of domestic and international producers, including farmer cooperatives, subsidiaries of larger companies, and independent crop nutrient companies. Foreign competitors often have access to cheaper raw materials, are required to comply with less stringent regulatory requirements or are owned or subsidized by governments and, as a result, may have cost advantages over North American companies. We believe that our extensive North American and international production and distribution system provides us with a competitive advantage by allowing us to achieve economies of scale, transportation and storage efficiencies, and obtain market intelligence. Also, we believe our premium products provide us a competitive advantage with customers in North and South America.

Unlike many of our competitors, we have our own distribution system to sell phosphate- and potash-based crop nutrients and animal feed ingredients, whether produced by us or by other third parties, around the globe. In North America, we have one of the largest and most strategically located distribution systems for crop nutrients, including warehouse facilities in key agricultural regions. We also have an extensive network of distribution facilities internationally, including in the key growth regions of South America and Asia, with port terminals, warehouses, and blending plants in Brazil, Paraguay, China, and India. Our global presence allows us to efficiently serve customers in approximately 40 countries.

Phosphates Segment

Our Phosphates segment operates in a highly competitive global market. Among the competitors in the global phosphate industry are domestic and foreign companies, as well as foreign government-supported producers in Asia and North Africa. Phosphate producers compete primarily based on price, as well as product quality, service and innovation. Major integrated producers of feed phosphates are located in the United States, Europe and China. Many smaller producers are located in emerging markets around the world. Many of these smaller producers are not miners of phosphate rock or manufacturers of phosphoric acid and are required to purchase this material on the open market.

We believe that we are a low-cost integrated producer of phosphate-based crop nutrients, due in part to our scale, vertical integration and strategic network of production and distribution facilities. As the world's largest producer of concentrated phosphates, as well as the second largest miner of phosphate rock in the world and the largest in the United States, we maintain an advantage over some competitors as the scale of operations effectively reduces production costs per unit. We are also vertically integrated to captively supply one of our key inputs, phosphate rock, to our phosphate production facilities. We believe that our position as an integrated producer of phosphate rock provides us with a significant cost advantage over competitors that are non-integrated phosphate producers. Our investment in the Miski Mayo Mine and related commercial offtake supply agreement to purchase a share of the phosphate rock allows us to supplement our overall phosphate rock needs. In addition, we expect that MWSPC will enable us to not only further diversify our sources of phosphates but also improve our access to key agricultural countries in Asia and the Middle East.

We produce ammonia at our Faustina, Louisiana concentrates plant in quantities sufficient to meet approximately one quarter of our total ammonia needs. With no captive ammonia production in Florida, we are subject to significant volatility in our purchase price of ammonia from world markets. The CF Ammonia Supply Agreement is expected to provide us with a long-term supply of a substantial volume of ammonia at prices based on the price of natural gas, and is intended to lessen this volatility.

With our dedicated sulfur transportation barges and tugs, and our 50% ownership interest in Gulf Sulphur Services, we are also well-positioned to source an adequate, flexible and cost-effective supply of sulfur, our third key input. We believe that our investments in sulfur assets continue to afford us a competitive advantage compared to other producers in cost and access to sulfur.

With facilities in both central Florida and Louisiana, we are logistically well positioned to fulfill our needs at very competitive prices. Those multiple production points also afford us the flexibility to optimally balance supply and demand.

Potash Segment

Potash is a commodity available from several geographical regions around the world and, consequently, the market is highly competitive. Through our participation in Canpotex, we compete outside of North America against various independent and state-owned potash producers. Canpotex has substantial expertise and logistical resources for the international distribution of potash including strategically located export assets in Portland, Oregon, St. John, New Brunswick, and Vancouver, British Columbia. Our principal methods of competition with respect to the sale of potash include product pricing, and offering consistent, high-quality products and superior service. We believe that our potash cost structure is competitive in the industry and should improve as we continue to complete our potash expansion projects.

International Distribution Segment

Our International Distribution segment generally operates in highly competitive business environments in each of its markets, competing with local businesses and with products that are available from many other sources. We believe that our International Distribution segment's vertical integration with our own production businesses, as well as our focus on product innovation and customer solutions, position us with an advantage over many of our competitors. We have a strong brand in the countries in which we have international distribution activities. In addition to having access to our own production, our international distribution activities have the capability to supply a wide variety of crop nutrients to our dealer/farmer customer base. Our strategic positions in Brazil, Paraguay, China and India allow us to capitalize on the nutrient demand in these large and growing international regions.

FACTORS AFFECTING DEMAND

Our results of operations historically have reflected the effects of several external factors which are beyond our control and have in the past produced significant downward and upward swings in operating results. Revenues are highly dependent upon conditions in the agriculture industry and can be affected by, among other factors: crop conditions; changes in agricultural production practices; worldwide economic conditions, including the increasing world population, household incomes, and demand for more protein-rich food, particularly in developing regions such as China, India, and Latin America; changing demand for biofuels; variability in commodity pricing; governmental policies; the level of inventories in the crop nutrient distribution channels; customer expectations about farmer economics, future crop nutrient prices and availability, and transportation costs, among other matters; market trends in raw material costs; market prices for crop nutrients; and weather. Furthermore, our crop nutrients business is seasonal to the extent farmers and agricultural enterprises in the markets in which we compete purchase more crop nutrient products during the spring and fall. The international scope of our business, spanning the northern and southern hemispheres, reduces to some extent the seasonal impact on our business. 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 seasonal nature of our businesses requires significant working capital for inventory in advance of the planting seasons.

We sell products throughout the world. Unfavorable changes in trade protection laws, policies and measures, government policies and other regulatory requirements affecting trade; unexpected changes in tax and trade treaties; strengthening or weakening of foreign economies as well as political relations with the United States may cause sales trends to customers in one or more foreign countries to differ from sales trends in the United States.

Our international operations are subject to risks from changes in foreign currencies, or government policy, which can affect local farmer economics.

OTHER MATTERS

Employees

We had approximately 8,700 employees as of December 31, 2016, consisting of approximately 3,600 salaried and 5,100 hourly employees.

Labor Relations

As of December 31, 2016:

- We had ten collective bargaining agreements with unions covering 81% of our hourly employees in the U.S. and Canada. Of these employees, approximately 30% are covered under collective bargaining agreements scheduled to expire in 2017.

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- Agreements with twelve unions covered all employees in Brazil, representing 83% of our international employees. More than one agreement may govern our relations with each of these unions. In general, the agreements are renewable on an annual basis.

Failure to renew any of our union agreements could result in a strike or labor stoppage that could have a material adverse effect on our operations. However, we have not experienced significant work stoppage in many years and historically have had good labor relations.

Financial Information about our Business Segments and Operations by Geographic Areas

We have included financial information about our business segments, our operations by geographic area and our revenues by class of similar products in Note 25 of our Consolidated Financial Statements.

Information Available on our Website

Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments thereto, filed with the SEC pursuant to Section 13(a) of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder are made available free of charge on our website, (www.mosaicco.com), as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The information contained on our website is not being incorporated in this report.

EXECUTIVE OFFICERS

Information regarding our executive officers as of February 15, 2017 is set forth below:

Name	Age	Position
Bruce M. Bodine Jr.	45	Senior Vice President—Potash Operations
Mark J. Isaacson	54	Senior Vice President, General Counsel and Corporate Secretary
Richard L. Mack	49	Executive Vice President and Chief Financial Officer
Richard N. McLellan	60	Senior Vice President—Commercial
James “Joc” C. O’Rourke	56	Chief Executive Officer, President and Director
Walter F. Precourt III	52	Senior Vice President—Phosphates Operations
Corrine D. Ricard	53	Senior Vice President—Human Resources

Bruce M. Bodine Jr. Mr. Bodine has been Senior Vice President - Potash since June 2016. Prior to that, he served as our Vice President - Potash (since April 2016), prior to that as our Vice President - Supply Chain (since August 2015), prior to that as our Vice President - Operations Business Development (since October 2014), prior to that as Vice President - Operations for our Esterhazy and Colonsay potash production facilities (since July 2013), prior to that as the General Manager, Esterhazy (since September 2012) and prior to that as the General Manager, Four Corners (since March 2010). Before that, Mr. Bodine held various plant and mine development management positions in the Phosphates segment beginning with Mosaic's formation in 2004, and prior to that he served in various engineering leadership positions with our predecessor company, IMC Global Inc.

Mark J. Isaacson. Mr. Isaacson was elected Senior Vice President, General Counsel and Corporate Secretary in August 2015 and previously served as our Vice President, General Counsel and Corporate Secretary since August 2014. Mr. Isaacson joined Mosaic upon its formation in 2004 as its Chief Phosphates Counsel before being promoted to Vice President, Associate General Counsel and Chief Compliance Officer in 2011 and to Vice President, Acting General Counsel and Corporate Secretary in June 2014. Prior to joining Mosaic, Mr. Isaacson worked for 15 years at Cargill, Inc., where he served as Senior Attorney for a number of its business units.

Richard L. Mack. Mr. Mack has been our Executive Vice President and Chief Financial Officer since June 2014. Prior to that, he served as Executive Vice President, General Counsel and Corporate Secretary since January 1, 2009 and before that as Senior Vice President, General Counsel and Corporate Secretary since our formation in 2004. Mr. Mack was a founding executive responsible for our formation in the 2004 business combination between IMC Global Inc. and Cargill Crop Nutrition and was a core member of the executive team responsible for our subsequent successful spin-off from Cargill.

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Since that time he has played key roles in negotiating and executing strategic transactions; led our successful resolution of a number critical legal disputes; led the development of our land use strategy, including the development of Streamsong Resort®; and led the development and implementation of our phosphate rock mine permitting strategy in Florida. Prior to our formation, Mr. Mack was a Senior Attorney in Cargill's worldwide law department and a co-founder of Cargill's venture capital business unit. Mr. Mack is a director of Titan Machinery, Inc. and a member of the MWSPC board, and serves on the Boards of Trustees of Hamline University and Mitchell | Hamline School of Law.

Richard N. McLellan. Mr. McLellan was appointed Senior Vice President - Brazil in February 2017. Prior to that time he served as Senior Vice President—Commercial since April 2007, and before that as our Vice President—North American Sales since December 2005 and as Country Manager for our (and, prior to the Combination, Cargill's) Brazilian crop nutrient business since November, 2002. Mr. McLellan joined Cargill in 1989 and held various roles in its Canadian and U.S. operations, including grain, retail and wholesale crop nutrient distribution.

James "Joc" C. O'Rourke. Mr. O'Rourke was promoted to President and Chief Executive Officer effective in August 2015. Previously, he served as Executive Vice President—Operations and Chief Operating Officer since August 2012 and before that as Executive Vice President—Operations since January 2009. Prior to joining Mosaic, Mr. O'Rourke was President, Australia Pacific for Barrick Gold Corporation, the largest gold producer in Australia, since May 2006, where he was responsible for the Australia Pacific Business Unit consisting of ten gold and copper mines in Australia and Papua New Guinea. Before that, Mr. O'Rourke was Executive General Manager in Australia and Managing Director of Placer Dome Asia Pacific Ltd., the second largest gold producer in Australia, from December 2004, where he was responsible for the Australia Business Unit consisting of five gold and copper mines; and General Manager of Western Australia Operations for Iluka Resources Ltd., the world's largest zircon and second largest titanium producer, from September 2003, where he was responsible for six mining and concentrating operations and two mineral separation/synthetic rutile refineries. Mr. O'Rourke had previously held various management, engineering and other roles in the mining industry in Canada and Australia since 1984. Mr. O'Rourke has served on our Board of Directors since May 2015 and is also a director of The Toro Company.

Walter F. Precourt III. Mr. Precourt was named Senior Vice President—Phosphates effective in June 2016 and in this role he also provides executive oversight for the corporate procurement and Environmental, Health and Safety organizations. He previously served as our Senior Vice President—Potash Operations since May 2012, and before that he led our Environment, Health and Safety organization since joining Mosaic in 2009. Prior to joining Mosaic, Mr. Precourt was employed by cement and mineral component producer Holcim (U.S.) where he initially led its safety transformation and later became Vice President of Environment and Government Affairs. Mr. Precourt started his career at The Dow Chemical Company where he served in a variety of roles in Operations, Technology, Capital Project Management, and Environmental, Health and Safety. Mr. Precourt serves as a director and is the past Chairman of the Board of the Saskatchewan Potash Producers Association and is a director of Fertilizer Canada.

Corrine D. Ricard. Ms. Ricard was appointed Senior Vice President - Commercial in February 2017. Prior to that time she served as our Senior Vice President—Human Resources since April 2012, and before that she held a number of other leadership positions at Mosaic, including Vice President—International Distribution, Vice President—Business Development and Vice President—Supply Chain. Prior to Mosaic's formation, Ms. Ricard worked for Cargill in various roles including risk management, supply chain and commodity trading.

Our executive officers are generally elected to serve until their respective successors are elected and qualified or until their earlier death, resignation or removal. No "family relationships," as that term is defined in Item 401(d) of Regulation S-K, exist among any of the listed officers.

Item 1A. Risk Factors.

Our business, financial condition or results of operations could be materially adversely affected by any of the risks and uncertainties described below.

Our Esterhazy mine has had an inflow of salt saturated brine for more than 30 years.

Since December 1985, we have had inflows of salt saturated brine into our Esterhazy, Saskatchewan mine. Over the past century, several potash mines experiencing water inflow problems have flooded. In order to control brine inflows at Esterhazy, we have incurred, and will continue to incur, expenditures, certain of which, due to their nature, have been capitalized, while others have been charged to expense.

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At various times, we experience changing amounts and patterns of brine inflows at the Esterhazy mine. Periodically, some of these inflows have exceeded available pumping capacity. If that were to continue for several months without abatement, it could exceed our available storage capacity and ability to effectively manage the brine inflow. This could adversely affect production at the Esterhazy mine. The brine inflow is variable, resulting in both net inflows (the rate of inflow is more than the amount we are pumping out of the mine) and net outflows (when we are pumping more brine out of the mine than the rate of inflow). There can be no assurance that:

- our pumping, surface storage, underground storage or injection well capacities for brine will continue to be sufficient, or that the pumping, grouting and other measures that we use to manage the inflows at the Esterhazy mine will continue to be effective;
- there will not be a disruption in the supply of calcium chloride, which is a primary material used to reduce or prevent the flow of incoming brine;
- our estimates of the volumes of net inflows or net outflows of brine, or storage capacity for brine at the Esterhazy mine, are accurate;
- the volumes of the brine inflows will not fluctuate from time to time, the rate of the brine inflows will not be greater than our prior experience or current assumptions, changes in inflow patterns will not adversely affect our ability to locate and manage the inflows, or that any such fluctuations, increases or changes would not be material; and
- the expenditures to control the inflows will be consistent with our prior experience or future estimates.

From time to time, new or improved technology becomes available to facilitate our remediation of the inflows, such as when horizontal drilling techniques were developed and refined. Taking advantage of these new or improved technologies may require significant capital expenditures and/or may increase our costs of remediation.

It is possible that the costs of remedial efforts at Esterhazy may further increase in the future and that such an increase could be material, or, in the extreme scenario, that the brine inflows, risk to employees or remediation costs may increase to a level which would cause us to change our mining processes or abandon the mines. See “Key Factors that can Affect Results of Operations and Financial Condition” and “Potash Net Sales and Gross Margin” in our Management’s Analysis, which is incorporated herein by reference, for a discussion of costs, risks and other information relating to the brine inflows.

Due to the ongoing brine inflow at Esterhazy, subject to exceptions that are limited in scope and amount, we are unable to obtain insurance coverage for underground operations for water incursion problems. Our mines at Colonsay, Saskatchewan, and Carlsbad, New Mexico, are also subject to the risks of inflow of water as a result of our shaft mining operations.

Our operating results are highly dependent upon and fluctuate based upon business and economic conditions and governmental policies affecting the agricultural industry where we or our customers operate. These factors are outside of our control and may significantly affect our profitability.

Our operating results are highly dependent upon business and economic conditions and governmental policies affecting the agricultural industry, which we cannot control. The agricultural products business can be affected by a number of factors. The most important of these factors, for U.S. markets, are:

- weather patterns and field conditions (particularly during periods of traditionally high crop nutrients consumption);
- quantities of crop nutrients imported to and exported from North America;
- current and projected grain inventories and prices, which are heavily influenced by U.S. exports and world-wide grain markets; and
- U.S. governmental policies, including farm and biofuel policies, which may directly or indirectly influence the number of acres planted, the level of grain inventories, the mix of crops planted or crop prices or otherwise negatively affect our operating results.

International market conditions, which are also outside of our control, may also significantly influence our operating results. The international market for crop nutrients is influenced by such factors as the relative value of the U.S. dollar and its impact upon the cost of importing crop nutrients, foreign agricultural policies, including subsidy policies, the existence of, or changes in, import or foreign currency exchange barriers in certain foreign markets, changes in the hard currency demands of certain countries and other regulatory policies of foreign governments, as well as the laws and policies of the United States affecting foreign trade and investment.

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Our most important products are global commodities, and we face intense global competition from other crop nutrient producers that can affect our prices and volumes.

Our most important products are concentrated phosphate crop nutrients, including diammonium phosphate, or DAP, monoammonium phosphate, or MAP, MicroEssentials® and muriate of potash, or MOP. We sell most of our DAP, MAP and MOP in the form of global commodities. Our sales of these products face intense global competition from other crop nutrient producers.

Changes in competitors' production or shifts in their marketing focus have in the past significantly affected both the prices at which we sell our products and the volumes that we sell, and are likely to continue to do so in the future. Competitors are more likely to increase their production at times when world agricultural and crop nutrient markets are strong, and to focus on sales into regions where their returns are highest. Increases in the global supply of DAP, MAP and MOP or competitors' increased sales into regions in which we have significant sales could adversely affect our prices and volumes.

Competitors and potential new entrants in the markets for both concentrated phosphate crop nutrients and potash have in recent years expanded capacity, or begun, or announced plans, to expand capacity or build new facilities. The extent to which current global or local economic and financial conditions, changes in global or local economic and financial conditions, or other factors may cause delays or cancellation of some of these ongoing or planned projects, or result in the acceleration of existing or new projects, is unclear. In addition, the level of exports by producers of concentrated phosphate crop nutrients in China depends to a significant extent on Chinese government actions to curb exports through, among other measures, prohibitive export taxes at times when the government believes it desirable to assure ample domestic supplies of concentrated phosphate crop nutrients to stimulate grain and oilseed production.

In addition, some of our competitors who are expanding their potash production capacity include other members of Canpotex. Canpotex members' respective shares of Canpotex sales is based upon the members' respective proven peaking capacity for producing potash. When a Canpotex member expands its production capacity, the new capacity is added to that member's proven peaking capacity based on a proving run at the maximum production level. Alternatively, after January 2017, Canpotex members may elect to rely on an independent engineering firm and approved protocols to calculate their proven peaking capacity. Antitrust and competition laws prohibit the members of Canpotex from coordinating their production decisions, including the timing of their respective proving runs. Worldwide potash production levels during these proving runs could exceed then-current market demand, resulting in an oversupply of potash and lower potash prices.

We cannot accurately predict when or whether competitors' or new entrants' ongoing or planned capacity expansions or new facilities will be completed, the timing of competitors' tests to prove peaking capacity for Canpotex purposes, the cumulative effect of these and recently completed expansions, the impact of future decisions by the Chinese government on the level of Chinese exports of concentrated phosphate crop nutrients, or the effects of these or other actions by our competitors on the prices for our products or the volumes that we will be able to sell.

Our crop nutrients and other products are subject to price and demand volatility resulting from periodic imbalances of supply and demand, which may cause our results of operations to fluctuate.

Historically, the market for crop nutrients has been cyclical, and prices and demand for our products have fluctuated to a significant extent, particularly for phosphates and, to a lesser extent, potash. Periods of high demand, increasing profits and high capacity utilization tend to lead to new plant investment and increased production. This growth increases supply until the market is over-saturated, leading to declining prices and declining capacity utilization until the cycle repeats.

As a result, crop nutrient prices and volumes have been volatile. This price and volume volatility may cause our results of operations to fluctuate and potentially deteriorate. The price at which we sell our crop nutrient products and our sales volumes could fall in the event of industry oversupply conditions, which could have a material adverse effect on our business, financial condition and results of operations. In contrast, high prices may lead our customers and farmers to delay purchasing decisions in anticipation of future lower prices, thus impacting our sales volumes.

Due to reduced market demand, depressed agricultural economic conditions and other factors, we and our predecessors have at various times suspended or reduced production at some of our facilities. The extent to which we utilize available capacity at our facilities will cause fluctuations in our results of operations, as we will incur costs for any temporary or indefinite shutdowns of our facilities and lower sales tend to lead to higher fixed costs as a percentage of sales.

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Variations in crop nutrient application rates may exacerbate the cyclicality of the crop nutrient markets.
Farmers are able to maximize their economic return by applying optimum amounts of crop nutrients. Farmers' decisions about the application rate for each crop nutrient, or to forego application of a crop nutrient, particularly phosphate and potash, vary from year to year depending on a number of factors, including among others, crop prices, crop nutrient and other crop input costs or the level of the crop nutrient remaining in the soil following the previous harvest. Farmers are more likely to increase application rates when crop prices are relatively high, crop nutrient and other crop input costs are relatively low and the level of the crop nutrient remaining in the soil is relatively low. Conversely, farmers are likely to reduce or forego application when farm economics are weak or declining or the level of the crop nutrients remaining in the soil is relatively high. This variability in application rates can materially accentuate the cyclicality in prices for our products and our sales volumes.
Our crop nutrient business is seasonal, which may result in carrying significant amounts of inventory and seasonal variations in working capital, and our inability to predict future seasonal crop nutrient demand accurately may result in excess inventory or product shortages.
The crop nutrient business is seasonal. Farmers tend to apply crop nutrients during two short application periods, the strongest one in the Spring before planting and the other in the Fall after harvest. As a result, the strongest demand for our products typically occurs during the Spring planting season, with a second period of strong demand following the Fall harvest. In contrast, we and other crop nutrient producers generally produce our products throughout the year. As a result, we and/or our customers generally build inventories during the low demand periods of the year in order to ensure timely product availability during the peak sales seasons. The seasonality of crop nutrient demand results in our sales volumes and net sales typically being the highest during the North American Spring season and our working capital requirements typically being the highest just prior to the start of the Spring 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.
If seasonal demand exceeds our projections, we will not have enough product and our customers may acquire products from our competitors, which would negatively impact our profitability. If seasonal demand is less than we expect, we will be left with excess inventory and higher working capital and liquidity requirements. 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 distribution channels for crop nutrients have capacity to build significant levels of inventories, which can adversely affect our sales volumes and selling prices.
In order to balance the production needs of crop nutrient producers with farmers' seasonal use of crop nutrients, crop nutrient distribution channels need to have the capacity to build significant inventories. The build-up of inventories in the distribution channels can become excessive, particularly during the cyclical periods of low demand that have been typical in the crop nutrient industry. When there are excessive inventories in the distribution channel, our sales volumes and selling prices can be adversely impacted, even during periods in which farmers' use of crop nutrients may remain strong.
Changes in transportation costs can affect our sales volumes and selling prices.
The cost of delivery is a significant factor in the total cost to customers and farmers of crop nutrients. As a result, changes in transportation costs or in customer expectations about them can affect our sales volumes and prices.
Customer expectations about future events can have a significant effect on the demand for our products. These expectations can significantly affect our sales volumes and selling prices.
Customer expectations about future events have had and are expected to continue to have an effect on the demand and prices for crop nutrients. Future events that may be affected by customer expectations include, among others:
- Customer expectations about future crop nutrient prices and availability.

Customer expectations about selling prices and availability of crop nutrients have had and are expected to continue to have an effect on the demand for crop nutrients. When customers anticipate increasing crop nutrient selling prices, customers tend to accumulate inventories before the anticipated price increases. This can result in a lag in our realization of rising market prices for our products. Conversely, customers tend to delay their purchases when they anticipate future selling prices for crop nutrients will stabilize or decrease, adversely affecting our sales volumes and selling prices. Customer expectations about availability of crop nutrients can have similar effects on sales volumes and prices.

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- Customer expectations about future farmer economics.

Similarly, customer expectations about future farmer economics have had and are expected to continue to have an effect on the demand for crop nutrients. When customers anticipate improving farmer economics, customers tend to accumulate crop nutrient inventories in anticipation of increasing sales volumes and selling prices. This can result in a lag in our realization of rising market prices for our products. Conversely, when customers anticipate declining farmer economics, customers tend to reduce the level of their purchases of crop nutrients, adversely affecting our sales volumes and selling prices.

- Changes in customer expectations about transportation costs.

As discussed above, increasing transportation costs effectively increase customers' and farmers' costs for crop nutrients and can reduce the amount we realize for our sales. Expectations of decreasing transportation costs can result in customers and farmers anticipating that they may be able to decrease their costs by delaying purchases. As a result, changes in customer expectations about transportation costs can affect our sales volumes and prices.

We conduct our operations primarily through a limited number of key production and distribution facilities. Any disruption at one of these facilities could have a material adverse impact on our business. The risk of material disruption increases when demand for our products results in high operating rates at our facilities.

We conduct our operations through a limited number of key production and distribution facilities. These facilities include our phosphate mines and concentrates plants; our potash mines; and the ports and other distribution facilities through which we, Canpotex and any joint ventures in which we participate, conduct our respective businesses, as well as other commercial arrangements with unrelated third parties. Any disruption of operations at one of these facilities has the possibility of significantly affecting our production or our ability to distribute our products. Operating these facilities at high rates during periods of high demand for our products increases the risk of mechanical or structural failures, decreases the time available for routine maintenance and increases the impact on our operating results from any disruption. A disruption of operations at one of our key facilities could have a material adverse effect on our results of operations or financial condition.

Examples of the types of events that could result in a disruption at one of these facilities include: adverse weather; strikes or other work stoppages; deliberate, malicious acts, including acts of terrorism; political and economic instability; cyber attacks and other risks associated with our international operations; changes in permitting, financial assurance or other environmental, health and safety laws or other changes in the regulatory environment in which we operate; legal and regulatory proceedings; our relationships with other members of Canpotex and any joint ventures in which we participate and their or our exit from participation in Canpotex or any such joint ventures; other changes in our commercial arrangements with unrelated third parties; brine inflows at our Esterhazy, Saskatchewan, mine or our other shaft mines; mechanical failure and accidents occurring in the course of operating activities; and other factors.

Insurance market conditions, our loss experience and other factors affect the insurance coverage that we carry, and we are not fully insured against all potential hazards and risks incident to our business. As a result, our insurance coverage may not adequately cover our losses.

We maintain property, business interruption and casualty insurance policies, but we are not fully insured against all potential hazards and risks incident to our business. We are subject to various self-retentions and deductibles under these insurance policies. As a result of market conditions, our loss experience and other factors, our premiums, self-retentions and deductibles for 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. As a result, a disruption of operations at one of our key facilities or a significant casualty could have a material adverse effect on our results of operations or financial condition.

Important raw materials and energy used in our businesses in the past have been and may in the future be the subject of volatile pricing. Changes in the price of our raw materials could have a material impact on our businesses.

Natural gas, ammonia and sulfur are key raw materials used in the manufacture of phosphate crop nutrient products. Natural gas is used as both a chemical feedstock and a fuel to produce anhydrous ammonia, which is a raw material used in the production of concentrated phosphate products. Natural gas is also a significant energy source used in the potash solution mining process. From time to time, our profitability has been and may in the future be impacted by the price and availability of these raw materials and other energy costs. Because most of our products are commodities, there can be no assurance that we will be able to pass through increased costs to our customers. A significant increase in the price of natural gas, ammonia, sulfur or energy costs that is not recovered through an increase in the price of our related crop nutrients products could have a material adverse impact on our business. In addition, under our long-term CF Ammonia Supply Agreement we have agreed to purchase approximately 545,000 to 725,000 tonnes of ammonia per year during a term that may extend until December 31, 2032 at a price to be determined by a formula based on the prevailing price of U.S. natural gas. If the price of natural gas rises or the market price for ammonia falls outside of the range anticipated at execution of the agreement, we may not realize a cost benefit from the natural gas based pricing over the term of the agreement, or the cost of our ammonia under the agreement could be a competitive disadvantage.

During periods when the price for concentrated phosphates is falling because of falling raw material prices, we may experience a lag in realizing the benefits of the falling raw materials prices. This lag can adversely affect our gross margins and profitability.

During some periods, changes in market prices for raw materials can lead to changes in the global market prices for concentrated phosphate crop nutrients. In particular, the global market prices for concentrated phosphate crop nutrients can be affected by changes in the market prices for sulfur, ammonia, phosphate rock and/or phosphoric acid raw materials. Increasing market prices for these raw materials tend to put upward pressure on the selling prices for concentrated phosphate crop nutrients, and decreasing market prices for these raw materials tend to put downward pressure on selling prices for concentrated phosphate crop nutrients. When the market prices for these raw materials plunge rapidly, the selling prices for our concentrated phosphate crop nutrients can fall more rapidly than we are able to consume our raw material inventory that we purchased or committed to purchase in the past at higher prices. As a result, our costs may not fall as rapidly as the selling prices of our products. Until we are able to consume the higher priced raw materials, our gross margins and profitability can be adversely affected.

During periods when the prices for our products are falling because of falling raw material prices, we could be required to write-down the value of our inventories. Any such write-down would adversely affect our results of operations and the level of our assets.

We carry our inventories at the lower of cost or market. In periods when the market prices for our products are falling rapidly in response to falling market prices for raw materials, it is possible that we could be required to write-down the value of our inventories if market prices fall below our costs. Any such write-down would adversely affect our results of operations and the level of our assets. Any such effect could be material.

Our estimates of future selling prices reflect in part the purchase commitments we have from our customers. As a result, defaults on these existing purchase commitments because of the global or local economic and financial conditions or for other reasons could adversely affect our estimates of future selling prices and require additional inventory write-downs.

In the event of a disruption to existing terminaling facilities or transportation for our products or raw materials, alternative terminaling facilities or transportation might not be available on a timely basis or have sufficient capacity to fully serve all of our customers or facilities.

In the event of a disruption of existing terminaling facilities or transportation for our products or raw materials, alternative terminaling facilities or transportation might not be available on a timely basis or have sufficient capacity to fully serve all of our customers or facilities.

Terminaling facilities and transportation include the ports and other distribution facilities through which we, Canpotex and the joint ventures in which we participate, conduct our respective businesses; transportation and related equipment arrangements; and other commercial arrangements with unrelated third parties.

Examples of the types of events that could result in a disruption of terminaling facilities or transportation include: adverse weather; strikes or other work stoppages; deliberate, malicious acts; political and economic instability and other risks associated with our international operations; changes in permitting, financial assurance or other environmental, health and safety laws or other changes in the regulatory environment in which we operate; legal and regulatory proceedings; our relationships with other members of Canpotex and any joint ventures in which we participate and their or our exit from participation in Canpotex or any such joint ventures; other changes in our commercial arrangements with unrelated third parties; accidents occurring in the course of operating activities; lack of truck, rail, barge or ship transportation; and other factors. We discuss a number of these examples in more detail throughout this Risk Factors section.

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We are subject to risks associated with our international sales and operations, which could negatively affect our sales to customers in foreign countries as well as our operations and assets in foreign countries. Some of these factors may also make it less attractive to distribute cash generated by our operations outside the United States to our stockholders, or to utilize cash generated by our operations in one country to fund our operations or repayments of indebtedness in another country or to support other corporate purposes.

For 2016, we derived approximately 63% of our net sales from customers located outside of the United States, of which our International Distribution segment accounted for 56%. As a result, we are subject to numerous risks and uncertainties relating to international sales and operations, including:

- difficulties and costs associated with complying with a wide variety of complex laws, treaties and regulations;
- unexpected changes in regulatory environments;
- increased government ownership and regulation of the economy in the countries we serve;
- political and economic instability, including the possibility for civil unrest, inflation and adverse economic conditions resulting from governmental attempts to reduce inflation, such as imposition of higher interest rates and wage and price controls;
- nationalization of properties by foreign governments;
- the imposition of tariffs, exchange controls, trade barriers or other restrictions, or government-imposed increases in the cost of resources and materials necessary for the conduct of our operations or the completion of strategic initiatives, including with respect to our joint ventures; and
- currency exchange rate fluctuations between the U.S. dollar and foreign currencies, particularly the Brazilian real and the Canadian dollar.

The occurrence of any of the above in the countries in which we operate or elsewhere could jeopardize or limit our ability to transact business there and could adversely affect our revenues and operating results and the value of our assets located outside of the United States.

In addition, tax regulations, currency exchange controls and other restrictions may also make it economically unattractive to:

- distribute cash generated by our operations outside the United States to our stockholders; or
- utilize cash generated by our operations in one country to fund our operations or repayments of indebtedness in another country or to support other corporate purposes.

Changes in tax laws or regulations or their interpretation, or exposure to additional tax liabilities, could materially adversely affect our operating results and financial condition.

We are subject to taxes, including income taxes, resource taxes and royalties, and other non-income based taxes in the U.S., Canada, China, Brazil and other countries where we operate. Changes in tax laws or regulations or their interpretation could result in higher taxes, which could materially adversely affect our operating results and financial condition.

Our international assets are located in countries with volatile conditions, which could subject us and our assets to significant risks.

We are a global business with substantial assets located outside of the United States and Canada. Our operations in Brazil, China, India and Paraguay are a fundamental part of our business. We also have joint venture investments in the Miski Mayo mine in Peru that supplies phosphate rock to us, and MWSPC, which is developing a mine and chemical complexes that we presently expect would produce phosphate fertilizers and other downstream products in the Kingdom of Saudi Arabia. Volatile economic, political and market conditions in these and other emerging market countries may have a negative impact on our operations, operating results and financial condition. In addition, unfavorable changes in trade protection laws, policies and measures, or governmental actions and policies and other regulatory requirements affecting trade and the pricing and sourcing of our raw materials, may also have a negative impact on our operations, operating results and financial condition.

Natural resource extraction is an important part of the economy in Peru, and, in the past, there have been protests against other natural resource operations in Peru. As of the date of this report, there remain numerous social conflicts that exist within the natural resource sector in Peru and as a result there is potential for active protests against natural resource companies. If the Government of Peru’s proactive efforts to address the social and environmental issues surrounding natural resource activities were not successful, protests could extend to or impact the Miski Mayo mine and adversely affect our investment in the Miski Mayo joint venture or the supply of phosphate rock to us from the mine.

Adverse weather conditions, including the impact of hurricanes, and excess heat, cold, snow, rainfall and drought, have in the past, and may in the future, adversely affect our operations, particularly our Phosphates business, and result in increased costs, decreased production and potential liabilities.

Adverse weather conditions, including the impact of hurricanes and excess heat, cold, snow, rainfall and drought, have in the past and may in the future adversely affect our operations, particularly our Phosphates business. In the past, hurricanes have resulted in minor physical damage to our facilities in Florida and Louisiana. In addition, a release of process wastewater at our Riverview, Florida facility during a hurricane resulted in a small civil fine, settlement for an immaterial amount of claims for natural resource damages by governmental agencies and an ongoing private lawsuit.

Additionally, water treatment costs, particularly at our Florida operations, due to high water balances tend to increase significantly following excess rainfall from hurricanes or other adverse weather. Some of our Florida facilities have had or could have high water levels that may require treatment. High water balances in the past at phosphate facilities in Florida also led the Florida Department of Environmental Protection ("FDEP") to adopt new rules requiring phosphate production facilities to meet more stringent process water management objectives for phosphogypsum management systems.

If additional excess rainfall or hurricanes occur in coming years, our facilities may be required to take additional measures to manage process water to comply with existing or future requirements and these measures could potentially have a material effect on our business and financial condition.

Adverse weather may also cause a loss of production due to disruptions in our supply chain or adversely affect delivery of our products to our customers. For example, oil refineries that supply sulfur to us may suspend operations as a result of a hurricane and incoming shipments of ammonia can be delayed, disrupting production at our Florida or Louisiana facilities and delivery of our products.

Drought can also adversely affect us. For example, drought can reduce farmers’ crop yields and the uptake of phosphates and potash, reducing the need for application of additional phosphates and potash for the next planting season. Drought can also lower river levels, adversely affecting delivery of our products to our customers.

Our operations are dependent on having the required permits and approvals from governmental authorities. Denial or delay by a government agency in issuing any of our permits and approvals or imposition of restrictive conditions on us with respect to these permits and approvals may impair our business and operations.

We hold numerous governmental environmental, mining and other permits and approvals authorizing operations at each of our facilities. A decision by a government agency to revoke or substantially modify an existing permit or approval could have a material adverse effect on our ability to continue operations at the affected facility.

Expansion of our operations also is predicated upon securing the necessary environmental or other permits or approvals. Over the next several years, we and our subsidiaries will be continuing our efforts to obtain permits in support of our anticipated Florida mining operations at certain of our properties.

A denial of, or delay in issuing, these permits, the issuance of permits with cost-prohibitive conditions, legal actions that prevent us from relying on permits or revocation of permits, could prevent us from mining at these properties and thereby have a material adverse effect on our business, financial condition or results of operations.

For example:

- In Florida, local community participation has become an important factor in the permitting process for mining companies, and various local counties and other parties in Florida have in the past and continue to file lawsuits challenging the issuance of some of the permits we require. These actions can significantly delay permit issuance.
- In fiscal 2009, in connection with our efforts to permit the Altman extension of our Four Corners, Florida, phosphate rock mine, non-governmental organizations filed a lawsuit in federal court against the Corps with respect to its actions in issuing a federal wetlands permit. The permit issued by the Corps remained in effect. Mining on the extension commenced and approximately 600 acres were mined and/or disturbed. In September 2013, this lawsuit was dismissed by the United States District Court for the Middle District of Florida, Jacksonville Division.
- Delays in receiving a federal wetlands permit impacted the scheduled progression of mining activities for the extension of our South Fort Meade, Florida, phosphate rock mine into Hardee County. As a result, we began to idle a portion of our mining equipment at the mine in the latter part of fiscal 2010. In June 2010, the Corps issued the federal wetlands permit. Subsequently, certain non-governmental organizations filed another lawsuit in the United States

District Court for the Middle District of Florida, Jacksonville Division, contesting the issuance of this federal

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wetlands permit, alleging that the Corps' actions in issuing the permit violated several federal laws relating to the protection of the environment. Preliminary injunctions entered into in connection with this lawsuit resulted in shutdowns or reduced production at our South Fort Meade mine until April 2012. Following a settlement of the lawsuit in February 2012 and court approval, we were able to resume normal production at our South Fort Meade mine.

The periods of shutdown and reduced phosphate rock production at our South Fort Meade mine resulted in costs to suspend operations and idle plant costs. Lower phosphate rock mining production levels also adversely affected gross margin.

We have included additional discussion about permitting for our phosphate mines in Florida under "Environmental, Health, Safety and Security Matters—Operating Requirements and Impacts—Permitting" in our Management's Analysis.

We are subject to financial assurance requirements as part of our routine business operations. These financial assurance requirements affect our costs and increase our liquidity requirements. If we were unable to satisfy applicable financial assurance requirements, we might not be able to obtain or maintain permits we need to operate our business as we have in the past. Our need to comply with these requirements could materially affect our business, results of operations or financial condition.

In many cases, as a condition to procuring or maintaining permits and approvals or otherwise, we are required to comply with financial assurance requirements of governmental authorities. The purpose of these requirements is to provide comfort to the government that sufficient funds will be available for the ultimate closure, post-closure care and/or reclamation of our facilities.

In some cases we are able to comply through the satisfaction of applicable state financial strength tests, but if we are unable to do so, we must utilize alternative methods of complying with the financial assurance requirements or we could be subject to enforcement proceedings brought by relevant government agencies. Potential alternative methods of compliance include providing credit support in the form of cash escrows or trusts, surety bonds from insurance companies, letters of credit from banks, or other forms of financial instruments or collateral to satisfy the financial assurance requirements or negotiating a consent agreement that establishes a different form of financial assurance. Use of alternative means of financial assurance imposes additional expense on us. Some of them, such as letters of credit, also use a portion of our available liquidity. Other alternative means of financial assurance, such as surety bonds, may in some cases require collateral and generally require us to obtain a discharge of the bonds or to post additional collateral (typically in the form of cash or letters of credit) at the request of the issuer of the bonds. Collateral that is required may be in many forms including letters of credit or other financial instruments that utilize a portion of our available liquidity, or in the form of assets such as real estate, which reduces our flexibility to manage or sell assets.

For example:

- With respect to two facilities we acquired as part of the CF Phosphate Assets Acquisition, (i) we have funded a trust to meet Florida state regulations governing financial assurance related to the post-closure care of the phosphogypsum stack at our closed Bonnie facility in Florida, and (ii) under the terms of a consent decree with federal and state regulators we currently provide credit support in the form of a surety bond from insurance companies, as a means of financial assurance for closure and post-closure care requirements for the phosphogypsum stack at our Plant City, Florida facility. These financial assurance funding obligations require estimates of future expenditures that could be impacted by refinements in scope, technological developments, cost inflation, changes in regulations, discount rates and the timing of activities. Additional funding could be required in the future if increases in cost estimates exceed the amount held in the trust or face amount of the surety bond, as applicable. In addition, with respect to the Plant City facility, our use of a surety bond may in some cases require that we obtain a discharge of the bond or post collateral at the request of the issuers of the bond. Required collateral may be in many forms including letters of credit or other financial instruments that utilize a portion of our available liquidity. Any of these circumstances could materially adversely affect our business, results of operations or financial condition.
- As more fully discussed in Note 13 of our Notes to Consolidated Financial Statements, in 2016 under the terms of two consent decrees with federal and state regulators we deposited a total of $630 million into two trust funds to provide additional financial assurance for the estimated costs of closure and post-closure care of most of our other phosphogypsum management systems in Florida (excluding those acquired as part of the CF Phosphate Assets

Acquisition) and Louisiana. As required under one of the consent decrees, we will also issue a $50 million letter of credit in 2017 to further support our financial assurance obligations. We have also agreed to guarantee the

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difference between the amounts held in each trust fund (including earnings) and the estimated closure and long-term care costs. Compliance with the financial assurance requirements included in these consent decrees satisfies substantially all of our state financial assurance obligations relating to the covered facilities, which were historically satisfied without the need for any expenditure of corporate funds to the extent our financial statements met certain balance sheet and income statement financial strength tests.

In the past, we have also not always been able to satisfy applicable financial strength tests, and in the future, it is possible that we will not be able to pass the applicable financial strength tests, negotiate or receive approval of consent decrees, establish escrow or trust accounts or obtain letters of credit, surety bonds or other financial instruments on acceptable terms and conditions or at a reasonable cost, or that the form and/or cost of compliance could increase, which could materially adversely affect our business, results of operations or financial condition.

We have included additional discussion about financial assurance requirements under “Off Balance Sheet Arrangements and Obligations—Other Commercial Commitments” in our Management’s Analysis.

The other environmental regulations to which we are subject may also have a material adverse effect on our business, financial condition and results of operations.

In addition to permitting and financial assurance requirements, we are subject to numerous other environmental, health and safety laws and regulations in the U.S., Canada, China, Brazil and other countries where we operate. These laws and regulations govern a wide range of matters, including environmental controls, land reclamation, discharges to air and water and remediation of hazardous substance releases. They significantly affect our operating activities as well as the level of our operating costs and capital expenditures. In some international jurisdictions, environmental laws change frequently and it may be difficult for us to determine if we are in compliance with all material environmental laws at any given time.

We are, and may in the future be, involved in legal and regulatory proceedings that could be material to us. These proceedings include “legacy” matters arising from activities of our predecessor companies and from facilities and businesses that we have never owned or operated.

We have in the past been, are currently and may in the future be subject to legal and regulatory proceedings that could be material to our business, results of operations, liquidity or financial condition. Joint ventures in which we participate could also become subject to these sorts of proceedings. These proceedings may be brought by the government or private parties and may arise out of a variety of matters, including:

- Allegations by the government or private parties that we have violated the permitting, financial assurance or other environmental, health and safety laws and regulations discussed above. For example, in connection with our settlement of matters relating to the U.S. Environmental Protection Agency's ongoing review of mineral processing industries under the U.S. Resource Conservation and Recovery Act, we entered into the consent decrees discussed above and in Note 13 of our Notes to Consolidated Financial Statements, which required us to provide additional financial assurance as described above, pay cash penalties of approximately $8 million in the aggregate, and modify certain operating practices and undertake certain capital improvement projects over a period of several years that are expected to result in capital expenditures likely to exceed $200 million in the aggregate. We are also involved in other proceedings alleging that, or to review whether, we have violated environmental laws in the United States and Brazil.
- Other environmental, health and safety matters, including alleged personal injury, wrongful death, complaints that our operations are adversely impacting nearby farms and other business operations, other property damage, subsidence from mining operations, natural resource damages and other damage to the environment, arising out of operations, including accidents. For example, several actions were initiated by the government and private parties related to a release of phosphoric acid process wastewater at our Riverview, Florida facility during a 2004 hurricane. In addition, a putative class action lawsuit was filed following the water loss incident that occurred at our New Wales, Florida facility in 2016 and in connection with that incident we also entered into an administrative consent order with the FDEP as discussed in greater detail in Note 21 of our Notes to Consolidated Financial Statements.
- Antitrust, commercial, tax (including tax audits) and other disputes. For example, we were one of a number of defendants in multiple class-action lawsuits, in which the plaintiffs sought unspecified amounts of damages including treble damages, alleging that we and other defendants conspired to, among other matters, fix the price at which potash was sold in the United States, allocated market shares and customers and fraudulently concealed their anticompetitive

conduct. In January 2013, we settled these class action antitrust lawsuits for an aggregate of $43.8 million.

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The legal and regulatory proceedings to which we are currently or may in the future be subject can, depending on the circumstances, result in monetary damage awards, fines, penalties, other liabilities, injunctions or other court or administrative rulings that interrupt, impede or otherwise materially affect our business operations, and/or criminal sanctions.

Among other environmental laws, the U.S. Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") imposes liability, including for cleanup costs, without regard to fault or to the legality of a party's conduct, on certain categories of persons, including current and former owners and operators of a site and parties who are considered to have contributed to the release of "hazardous substances" into the environment. Under CERCLA, or various U.S. state analogues, a party may, under certain circumstances, be required to bear more than its proportional share of cleanup costs at a site where it has liability if payments cannot be obtained from other responsible parties. As a crop nutrient company working with chemicals and other hazardous substances, we will periodically incur liabilities and cleanup costs, under CERCLA and other environmental laws, with regard to our current or former facilities, adjacent or nearby third-party facilities or offsite disposal locations.

Pending and potential legal and regulatory proceedings may arise out of our present activities, including operations at current facilities. They may also arise out of past activities by us, our predecessor companies and subsidiaries that our predecessors have sold. These past activities were in some cases at facilities that we and our subsidiaries no longer own or operate and may have never owned or operated.

Settlements of legal and regulatory matters frequently require court approval. In the event a court were not to approve of a settlement, it is possible that we and the other party or parties to the matter might not be able to settle it on terms that were acceptable to all parties or that we could be required to accept more stringent terms of settlement than required by the opposing parties.

We have included additional information with respect to pending legal and regulatory proceedings in Note 21 of our Notes to Consolidated Financial Statements and in this report in Part I, Item 3, "Legal Proceedings".

These legal and regulatory proceedings involve inherent uncertainties and could negatively impact our business, results of operations, liquidity or financial condition.

The permitting, financial assurance and other environmental, health and safety laws and regulations to which we are subject may become more stringent over time. This could increase the effects on us of these laws and regulations, and the increased effects could be material.

Continued government and public emphasis on environmental, health and safety issues in the U.S., Canada, China, Brazil, Paraguay and other countries where we operate can be expected to result in requirements that apply to us and our operations that are more stringent than those that are described above and elsewhere in this report. These more stringent requirements may include among other matters increased levels of future investments and expenditures for environmental controls at ongoing operations which will be charged against income from future operations, increased levels of the financial assurance requirements to which we are subject, increased efforts or costs to obtain permits or denial of permits, other new or interpretations of existing statutes or regulations that impose new or more stringent restrictions or liabilities, including liabilities or additional financial assurance requirements under CERCLA or similar statutes, including restrictions or liabilities related to elevated levels of naturally-occurring radiation that arise from disturbing the ground in the course of mining activities, and other matters that could increase our expenses, capital requirements or liabilities or adversely affect our business, liquidity or financial condition. In addition, to the extent restrictions imposed in countries where our competitors operate, such as China, India, Former Soviet Union countries or Morocco, are less stringent than in the countries where we operate, our competitors could gain cost or other competitive advantages over us. These effects could be material.

Among other matters, there are several recent or ongoing initiatives relating to nutrient discharges. New regulatory restrictions from these initiatives could have a material effect on either us or our customers. For example:

- The FDEP has adopted state nutrient criteria rules ("Florida NNC Rule") to supplant the requirements of numeric water quality standards for the discharge of nitrogen and/or phosphorus into Florida lakes and streams that were adopted by EPA in December 2010 (the "NNC Rule"). While EPA has withdrawn the federal NNC Rule and the FDEP criteria now are effective, the possibility remains that still-pending litigation relating to the NNC Rule or future litigation could challenge EPA's withdrawal or the effectiveness of the Florida NNC Rule. Subject to further litigation developments, we expect that compliance with the requirements of nutrient criteria rules could adversely affect our Florida Phosphate operations, require significant capital expenditures or substantially increase our annual operating expenses.

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- The Gulf Coast Ecosystem Restoration Task Force, established by executive order of the President and comprised of five Gulf states and eleven federal agencies, has delivered a final strategy for long-term ecosystem restoration for the Gulf Coast in 2016. The strategy calls for, among other matters, reduction of the flow of excess nutrients into the Gulf through state nutrient reduction frameworks, new nutrient reduction approaches and reduction of agricultural and urban sources of excess nutrients. Implementation of the strategy will require legislative or regulatory action at the state level. We cannot predict what the requirements of any such legislative or regulatory action could be or whether or how it would affect us or our customers.
- In March 2012, several nongovernmental organizations brought a lawsuit in federal court against EPA, seeking to require it to establish numeric nutrient criteria for nitrogen and phosphorous in the Mississippi River basin and the Gulf of Mexico. EPA had previously denied a 2008 petition seeking such standards. On May 30, 2012, the court granted our motion to intervene in this lawsuit. On September 20, 2013 the court held that while EPA was required to respond directly to the petition and find that numeric nutrient criteria either were or were not necessary for the Mississippi River watershed, EPA had the discretion to decide this issue based on non-technical factors, including cost, policy considerations and administrative complexity. EPA appealed the decision, and the Fifth Circuit Court of Appeals issued a decision in April 2015, holding in substantial part that EPA was not obligated to make a determination that numeric nutrient criteria are or are not necessary, provided EPA gives a reasonable explanation for its conclusion. The Court of Appeals remanded the case to the district court to decide whether EPA can meet that burden. On November 20, 2015, EPA filed a motion with the district court seeking summary judgment and on January 14, 2016, non-state intervenors including Mosaic filed a brief supporting EPA’s motion. On December 15, 2016, the Louisiana District Court granted EPA's motion for summary judgment. In the event that EPA were to adopt numeric nutrient criteria for the Mississippi River basin and the Gulf of Mexico, we cannot predict what these requirements would be or the effects they would have on us or our customers.

In addition, in April 2014 EPA and the U.S. Army Corps of Engineers jointly issued a proposed rule that would redefine the scope of waters regulated under the federal Clean Water Act. The final rule was issued in June 2015 and became effective in August 2015, but has been challenged through numerous lawsuits. In October 2015, the U.S. Court of Appeals for the Sixth Circuit issued an order staying the effectiveness of the final rule until after the legal validity of the regulation is resolved. We believe the new definition would expand the types and extent of water resources regulated under federal law, thereby potentially expanding our permitting and reporting requirements, increasing our costs of compliance, including costs associated with wetlands and stream mitigation, lengthening the time necessary to obtain permits, and potentially restricting our ability to mine certain of our phosphate rock reserves. These effects could be material.

Regulatory restrictions on greenhouse gas emissions and climate change regulations in the United States, Canada or elsewhere could adversely affect us, and these effects could be material.

Various governmental initiatives to limit greenhouse gas emissions are under way or under consideration around the world. These initiatives could restrict our operating activities, require us to make changes in our operating activities that would increase our operating costs, reduce our efficiency or limit our output, require us to make capital improvements to our facilities, increase our energy, raw material and transportation costs or limit their availability, or otherwise adversely affect our results of operations, liquidity or capital resources, and these effects could be material to us.

Governmental greenhouse gas emission initiatives include, among others, the December 2015 agreement (the “Paris Agreement”) which was the outcome of the 21st session of the Conference of the Parties under the United Nations Framework Convention on Climate Change (UNFCCC). The Paris Agreement, which was signed by nearly 200 nations including the United States and Canada, entered into force in late 2016 and sets out a goal of limiting the average rise in temperatures for this century to below 2 degrees Celsius. Each signatory is expected to develop its own plan (referred to as a Nationally Determined Contribution, or “NDC”) for reaching that goal.

The NDC submitted by the United States in 2015 aims to achieve, by 2025, an economy-wide target of reducing greenhouse gas emissions by 26-28% below its 2005 level. It also aims to use best efforts to reduce its emissions by 28%. The U.S. target covers all greenhouse gases that were a part of the 2014 Inventory of Greenhouse Gas Emissions and Sinks. While it is unclear whether the new U.S. executive administration will seek to implement the U.S. NDC, various legislative or regulatory initiatives relating to greenhouse gases have already been adopted or considered by the U.S. Congress, EPA or various states and those already adopted may be used to implement the U.S.'s NDC. Additionally, more stringent laws and regulations may be enacted to accomplish the goals set out in the NDC. Canada's intended NDC aims to achieve, by 2030, an economy-wide target of reducing greenhouse gas emissions by 30% below 2005 levels. In addition, in late 2016 the federal government announced plans for a comprehensive tax on carbon

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emissions, under which provinces opting out of the tax would have the option of adopting a cap-and-trade system. While no tax has formally been proposed, as implementation of the Paris Agreement proceeds, more stringent laws and regulations may be enacted to accomplish the goals set out in Canada's NDC. In addition, the Province of Saskatchewan, in which our Canadian potash mines are located, has passed legislation to facilitate the development and administration of climate change regulation in Saskatchewan by the Province rather than the federal government. This legislation is not yet effective, but key elements under consideration by the Province include establishing a provincial greenhouse gas emission reduction target, and compliance mechanisms that would provide flexibility for regulated emitters to meet their greenhouse gas reduction obligations. Our Saskatchewan Potash facilities will continue to work with the Saskatchewan Ministry of Environment and Environment Canada, through participation in industry associations, to determine next steps. We will also continue to monitor developments relating to the anticipated proposed legislation, as well as the potential future effect on our operating activities, energy, raw material and transportation costs, results of operations, liquidity or capital resources.
It is possible that future legislation or regulation addressing climate change, including in response to the Paris Agreement or any new international agreements, could adversely affect our operating activities, energy, raw material and transportation costs, results of operations, liquidity or capital resources, and these effects could be material. In addition, to the extent climate change restrictions imposed in countries where our competitors operate, such as China, India, Former Soviet Union countries or Morocco, are less stringent than in the United States or Canada, our competitors could gain cost or other competitive advantages over us.
Future climate change could adversely affect us.
The prospective impact of climate change on our operations and those of our customers and farmers remains uncertain. Scientists have hypothesized that the impacts of climate change could include changes in rainfall patterns, water shortages, changing sea levels, changing storm patterns and intensities, and changing temperature levels and that these changes could be severe. These impacts could vary by geographic location. At the present time, we cannot predict the prospective impact of climate change on our results of operations, liquidity or capital resources, or whether any such effects could be material to us.
Some of our competitors and potential competitors have greater resources than we do, which may place us at a competitive disadvantage and adversely affect our sales and profitability. These competitors include state-owned and government-subsidized entities in other countries.
We compete with a number of producers throughout the world, including state-owned and government-subsidized entities. Some of these entities may have greater total resources than we do, and may be less dependent on earnings from crop nutrients sales than we are. In addition, some of these entities may have access to lower cost or government-subsidized natural gas supplies, placing us at a competitive disadvantage. 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. To the extent other producers of crop nutrients enjoy competitive advantages or are willing to accept lower profit levels, the price of our products, our sales volumes and our profits may be adversely affected.
We do not own a controlling equity interest in our non-consolidated companies, some of which are foreign companies, and therefore our operating results and cash flow may be materially affected by how the governing boards and majority owners operate such businesses. There may also be limitations on monetary distributions from these companies that are outside of our control. Together, these factors may lower our equity earnings or cash flow from such businesses and negatively impact our results of operations.
In 2013 we entered into an agreement to form MWSPC, a joint venture to develop a mine and chemical complexes for an estimated $8.0 billion that is expected to produce phosphate fertilizers and other downstream products in the Kingdom of Saudi Arabia. We have a 25% interest in the joint venture and expect our cash investment will be up to $850 million, approximately $707 million of which had been funded as of December 31, 2016. We also expect to provide financial guarantees with respect to our proportionate share of certain future planned funding facilities of MWSPC. The success of MWSPC will depend on, among other matters, its ability to obtain the future planned funding facilities in acceptable amounts and upon acceptable terms, the timely development and commencement of operations of production facilities in the Kingdom of Saudi Arabia, the future success of current plans for the

development and operation of MWSPC, including the availability and affordability of necessary resources and materials and access to appropriate infrastructure, and any future changes in those plans, as well as the general economic and political stability of the region.

We also hold minority ownership interests in a joint venture that owns and operates a phosphate rock mine and in other companies that are not controlled by us. We expect that the operations and results of MWSPC will be, and the operations or

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results of some of the other joint ventures or companies are, significant to us, and their operations can affect our earnings. Because we do not control these companies either at the board or stockholder levels and because local laws in foreign jurisdictions and contractual obligations may place restrictions on monetary distributions by these companies, we cannot ensure that these companies will operate efficiently (or, in the case of MWSPC, in compliance with the terms of any future funding facility for which we may provide financial guarantees), pay dividends, or generally follow the desires of our management by virtue of our board or stockholder representation. As a result, these companies may contribute less than anticipated to our earnings and cash flow, negatively impacting our results of operations and liquidity. Additionally, in the case of MWSPC we may be called upon to provide funds to satisfy MWSPC's debt obligations to the extent we provide financial guarantees in connection with future planned funding facilities as discussed above.

Strikes or other forms of work stoppage or slowdown could disrupt our business and lead to increased costs.

Our financial performance is dependent on a reliable and productive work force. A significant portion of our workforce, and that of the joint ventures in which we participate, is covered by collective bargaining agreements with unions. Unsuccessful contract negotiations or adverse labor relations could result in strikes or slowdowns. Any disruptions may decrease our production and sales or impose additional costs to resolve disputes. The risk of adverse labor relations may increase as our profitability increases because labor unions' expectations and demands generally rise at those times.

Accidents occurring in the course of our operating activities could result in significant liabilities, interruptions or shutdowns of facilities or the need for significant safety or other expenditures.

We engage in mining and industrial activities that can result in serious accidents. If our safety procedures are not effective, or if an accident occurs, we could be subject to liabilities arising out of personal injuries or death, our operations could be interrupted and we might have to shut down or abandon affected facilities. Accidents could cause us to expend significant amounts to remediate safety issues or to repair damaged facilities. For example:

- Some of our mines are subject to potential damage from earthquakes.

The excavation of mines can result in potential seismic events or can increase the likelihood or potential severity of a seismic event. The rise and fall of water levels, such as those arising from the brine inflows and our remediation activities at our Esterhazy mine, can also result in or increase the likelihood or potential severity of a seismic event. Our Esterhazy mine has experienced minor seismic events from time to time. A significant seismic event at one of our mines could result in serious injuries or death, or damage to or flooding of the mine or, in the extreme scenario, cause us to change our mining process or abandon the mine.

- Our underground potash shaft mines are subject to risk from fire. In the event of a fire, if our emergency procedures are not successful, we could have significant injuries or deaths. In addition, fire at one of our underground shaft mines could halt our operations at the affected mine while we investigate the origin of the fire or for longer periods for remedial work or otherwise.

Our underground potash shaft mines at Esterhazy and Colonsay, Saskatchewan and Carlsbad, New Mexico are subject to risk from fire. Any failure of our safety procedures in the future could result in serious injuries or death, or shutdowns, which could result in significant liabilities and/or impact on the financial performance of our Potash business, including a possible material adverse effect on our results of operations, liquidity or financial condition.

- We handle significant quantities of ammonia at several of our facilities. If our safety procedures are not effective, an accident involving our ammonia operations could result in serious injuries or death, or result in the shutdown of our facilities.

We produce ammonia at our Faustina, Louisiana phosphate concentrates plant, use ammonia in significant quantities at all of our Florida and Louisiana phosphates concentrates plants and store ammonia at some of our distribution facilities. For our Florida phosphates concentrates plants, ammonia is received at terminals in Tampa and transported by pipelines and rail to our facilities. Our ammonia is generally stored and transported at high pressures or cryogenically. An accident could occur that could result in serious injuries or death, or the evacuation of areas near an accident. An accident could also result in property damage or the shutdown of our Florida or Louisiana phosphates concentrates plants, the ammonia terminals, pipelines or rail lines serving those plants or our other ammonia storage and handling facilities. As a result, an accident involving ammonia could have a material adverse effect on our results of operations, liquidity or financial condition.

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- We also use or produce other hazardous or volatile chemicals at some of our facilities. If our safety procedures are not effective, an accident involving these other hazardous or volatile chemicals could result in serious injuries or death, or result in the shutdown of our facilities.

We use sulfuric acid in the production of concentrated phosphates in our Florida and Louisiana operations. Some of our Florida and Louisiana facilities produce fluorosilicic acid, which is a hazardous chemical, for resale to third parties. We also use or produce other hazardous or volatile chemicals at some of our facilities. An accident involving any of these chemicals could result in serious injuries or death, or evacuation of areas near an accident. An accident could also result in property damage or shutdown of our facilities, or cause us to expend significant amounts to remediate safety issues or to repair damaged facilities. As a result, an accident involving any of these chemicals could have a material adverse effect on our results of operations, liquidity or financial condition.

Deliberate, malicious acts, including terrorism, could damage our facilities, disrupt our operations or injure employees, contractors, customers or the public and result in liability to us.

Intentional acts of destruction could hinder our sales or production and disrupt our supply chain. Our facilities could be damaged or destroyed, reducing our operational production capacity and requiring us to repair or replace our facilities at substantial cost. Employees, contractors and the public could suffer substantial physical injury for which we could be liable. Governmental authorities may impose security or other requirements that could make our operations more difficult or costly. The consequences of any such actions could adversely affect our operating results and financial condition.

We may be adversely affected by changing antitrust laws to which we are subject. Increases in crop nutrient prices can increase the scrutiny to which we are subject under these laws.

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, or the operations of Canpotex, which serves as an export association for our Potash business. Increases in crop nutrient prices have in the past resulted in increased scrutiny of the crop nutrient industry under antitrust and competition laws and can increase the risk that these laws could be interpreted, administered or enforced in a manner that could affect our operating practices or impose liability on us in a manner that could materially adversely affect our operating results and financial condition.

We may be adversely affected by other changes in laws resulting from increases in food and crop nutrient prices.

Increases in prices for, among other things, food, fuel and crop inputs (including crop nutrients) have in the past been the subject of significant discussion by various governmental bodies and officials throughout the world. In response to increases, it is possible that governments in one or more of the locations in which we operate or where we or our competitors sell our products could take actions that could affect us. Such actions could include, among other matters, changes in governmental policies relating to agriculture and biofuels (including changes in subsidy levels), price controls, tariffs, windfall profits taxes or export or import taxes. Any such actions could materially adversely affect our operating results and financial condition.

Our competitive position could be adversely affected if we are unable to participate in continuing industry consolidation.

Most of our products are readily available from a number of competitors, and price and other competition in the crop nutrient industry is intense. In addition, crop nutrient production facilities and distribution activities frequently benefit from economies of scale. As a result, particularly during pronounced cyclical troughs, the crop nutrient industry has a long history of consolidation. Mosaic itself is the result of a number of industry consolidations. We expect consolidation among crop nutrient producers could continue. Our competitive position could suffer to the extent we are not able to expand our own resources either through consolidations, acquisitions, joint ventures or partnerships. In the future, we may not be able to find suitable companies to combine with, assets to purchase or joint venture or partnership opportunities to pursue. Even if we are able to locate desirable opportunities, we may not be able to enter into transactions on economically acceptable terms. If we do not successfully participate in continuing industry consolidation, our ability to compete successfully could be adversely affected and result in the loss of customers or an uncompetitive cost structure, which could adversely affect our sales and profitability.

Our strategy for managing market and interest rate risk may not be effective.

Our businesses are affected by fluctuations in market prices for our products, the purchase price of natural gas, ammonia and sulfur consumed in operations, freight and shipping costs, foreign currency exchange rates and interest rates. We periodically

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enter into derivatives and forward purchase contracts to mitigate some of these risks. However, our strategy may not be successful in minimizing our exposure to these fluctuations. See "Market Risk" in our Management's Analysis and Note 14 of our Notes to Consolidated Financial Statements that is incorporated by reference in this report in Part II, Item 8.

A shortage or unavailability of railcars, tugs, barges and ships for carrying our products and the raw materials we use in our business could result in customer dissatisfaction, loss of production or sales and higher transportation or equipment costs.

We rely heavily upon truck, rail, tug, barge and ocean freight transportation to obtain the raw materials we need and to deliver our products to our customers. In addition, the cost of transportation is an important part of the final sale price of our products. Finding affordable and dependable transportation is important in obtaining our raw materials and to supply our customers. Higher costs for these transportation services or an interruption or slowdown due to factors including high demand, high fuel prices, labor disputes, layoffs or other factors affecting the availability of qualified transportation workers, adverse weather or other environmental events, or changes to rail, barge or ocean freight systems, could negatively affect our ability to produce our products or deliver them to our customers, which could affect our performance and results of operations.

Strong demand for grain and other products and a strong world economy increase the demand for and reduce the availability of transportation, both domestically and internationally. Shortages of railcars, barges and ocean transport for carrying product and increased transit time may result in customer dissatisfaction, loss of sales and higher equipment and transportation costs. In addition, during periods when the shipping industry has a shortage of ships the substantial time needed to build new ships prevents rapid market response. Delays and missed shipments due to transportation shortages, including vessels, barges, railcars and trucks, could result in customer dissatisfaction or loss of sales potential, which could negatively affect our performance and results of operations.

Additionally, we have agreed under our long-term CF Ammonia Supply Agreement to purchase approximately 545,000 to 725,000 tonnes of ammonia per year beginning with 2017, during a term that may extend until December 31, 2032, at a price to be determined by a formula based on the prevailing price of U.S. natural gas. For 2017, our remaining minimum purchase obligation is approximately 410,000 tonnes following our entry into a separate arrangement with CF under which we were deemed to have purchased approximately 135,000 tonnes in exchange for providing ammonia storage space and use of related terminal facilities to CF. We will be obligated to provide for transportation of the ammonia under the agreement, and if we fail to take the required minimum annual amount, CF may elect to require us to make payment of liquidated damages or, with respect to such failures in years after 2017, terminate the agreement. Payment of significant liquidated damages or an election by CF to terminate the agreement could adversely affect our business.

A lack of customers' access to credit can adversely affect their ability to purchase our products.

Some of our customers require access to credit to purchase our products. A lack of available credit to customers in one or more countries, due to global or local economic conditions or for other reasons, could adversely affect demand for crop nutrients.

We extend trade credit to our customers and guarantee the financing that some of our customers use to purchase our products. Our results of operations may be adversely affected if these customers are unable to repay the trade credit from us or financing from their banks. Increases in prices for crop nutrient, other agricultural inputs and grain may increase this risk.

We extend trade credit to our customers in the United States and throughout the world, in some cases for extended periods of time. In Brazil, where there are fewer third-party financing sources available to farmers, we also have several programs under which we guarantee customers' financing from financial institutions that they use to purchase our products. As our exposure to longer trade credit extended throughout the world and use of guarantees in Brazil increases, we are increasingly exposed to the risk that some of our customers will not pay us or the amounts we have guaranteed. Additionally, we become increasingly exposed to risk due to weather and crop growing conditions, fluctuations in commodity prices or foreign currencies, and other factors that influence the price, supply and demand for agricultural commodities. Significant defaults by our customers could adversely affect our financial condition and results of operations.

Increases in prices for crop nutrients increase the dollar amount of our sales to customers. The larger dollar value of our customers' purchases may also lead them to request longer trade credit from us and/or increase their need for us to guarantee their financing of our products. Either factor could increase the amount of our exposure to the risk that our customers may be unable to repay the trade credit from us or financing from their banks that we guarantee. In addition, increases in prices for

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other agricultural inputs and grain may increase the working capital requirements, indebtedness and other liabilities of our customers, increase the risk that they will default on the trade credit from us or their financing that we guarantee, and decrease the likelihood that we will be able to collect from our customers in the event of their default.

Tax rules governing the Cargill Transaction limited our ability to execute certain actions for a period of time following the Cargill Transaction and, if our procedures for compliance with those restrictions were ineffective, notwithstanding the IRS ruling and tax opinion issued to Cargill in connection with the Cargill Transaction, we could owe significant tax-related indemnification liabilities to Cargill.

The IRS issued a ruling to the effect that the Split-off that was part of the Cargill Transaction would be tax-free to Cargill and its stockholders, and in connection with the completion of the Cargill Transaction, Cargill received a tax opinion relating to certain tax consequences of the Cargill Transaction. Notwithstanding the IRS ruling and tax opinion, however, the Split-off and Debt Exchanges could be taxable to Cargill and its stockholders under certain circumstances. Therefore, we and Cargill agreed to tax-related restrictions and indemnities set forth in a tax agreement related to the Cargill Transaction, under which we were restricted or deterred from taking certain actions until May 26, 2013, including (i) redeeming or purchasing our stock in excess of agreed-upon amounts; (ii) issuing any equity securities in excess of agreed upon amounts; (iii) approving or recommending a third party's acquisition of us; (iv) permitting any merger or other combination of Mosaic or MOS Holdings Inc.; and (v) entering into an agreement for the purchase of any interest in Mosaic or MOS Holdings Inc., subject to certain exceptions. We agreed to indemnify Cargill for taxes and tax-related losses imposed on Cargill as a result of the Split-off and/or Debt Exchange failing to qualify as tax-free, if the taxes and related losses are attributable to, arise out of or result from certain prohibited acts or to any breach of, or inaccuracy in, any representation, warranty or covenant made by us in the tax agreement referred to above. The taxes and tax-related losses of Cargill would be material if these transactions fail to qualify as tax-free, and, while we do not believe we engaged in any prohibited acts during the relevant period, if our procedures for avoiding any of these prohibited acts or breaches were ineffective, this indemnity would result in material liabilities from us to Cargill that could have a material adverse effect on us. For a further discussion of the restrictions and indemnities set forth in the agreements related to the Cargill Transaction, please see Note 18 to our Notes to Consolidated Financial Statements.

Provisions in our restated certificate of incorporation and bylaws and of Delaware law may prevent or delay an acquisition of our company, which could decrease the trading price of our common stock.

Our restated certificate of incorporation and our amended and restated bylaws contain provisions that could have the effect of rendering more difficult or discouraging an acquisition deemed undesirable by our board of directors. These provisions include the ability of our board of directors to issue preferred stock without stockholder approval, a prohibition on stockholder action by written consent and the inability of our stockholders to request that our board of directors or chairman of our board call a special meeting of stockholders.

We are also subject to Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years from the date of the transaction in which the person became an interested stockholder, unless the interested stockholder attained this status with the approval of the board of directors or unless the business combination was approved in a prescribed manner. A "business combination" includes mergers, asset sales and other transactions resulting in a financial benefit to the interested stockholder. Subject to exceptions, an "interested stockholder" is a person who, together with affiliates and associates, owns, or within three years owned, 15% or more of the corporation's voting stock. This statute could prohibit or delay the accomplishment of mergers or other takeover or change in control attempts with respect to us and, accordingly, may discourage attempts to acquire us.

These provisions apply not only when they may protect our stockholders from coercive or otherwise unfair takeover tactics but even if the offer may be considered beneficial by some stockholders and could delay or prevent an acquisition that our board of directors determines is not in our best interests or those of our stockholders.

Our success will continue to depend on our ability to attract and retain highly qualified and motivated employees.

We believe our continued success depends on the collective abilities and efforts of our employees. Like many businesses, a significant number of our employees, including some of our most highly skilled employees with specialized expertise in potash and phosphates operations, will be approaching retirement age throughout the next decade and beyond. In addition, we compete for a talented workforce with other businesses, particularly within the mining and chemicals industries in general and the crop nutrients industry in particular. Our expansion plans are highly dependent on our ability to attract, retain and train highly qualified and motivated employees who are essential to the success of our ongoing operations as well as to our

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expansion plans. If we were to be unsuccessful in attracting, retaining and training the employees we require, our ongoing operations and expansion plans could be materially and adversely affected.

Future product or technological innovation could affect our business.

Future product or technological innovation such as the development of seeds that require less crop nutrients, the development of substitutes for our products or developments in the application of crop nutrients, if they occur, could have the potential to adversely affect the demand for our products and our results of operations, liquidity and capital resources.

Our acquisition of the global phosphate and potash operations of Vale S.A. ("Vale") conducted through Vale Fertilizantes S.A. (the "Transaction") is subject to review under antitrust laws and requires governmental approvals which could jeopardize completion of the acquisition or in some cases impose conditions on the acquisition that could have a material adverse effect on our ability to realize the anticipated benefits of the Transaction.

Completion of the Transaction is conditioned upon obtaining certain required governmental authorizations. There can be no assurance that the authorizations will be obtained, and we and the sellers are not obligated to accept any and all conditions imposed by governmental authorities in order to obtain such authorizations. In addition, the governmental authorities with or from which these authorizations are required have broad discretion in administering the governing regulations. As a condition to authorization of the acquisition, these governmental authorities may impose requirements, limitations or costs or require divestitures or place restrictions on our conduct of the business after completion of the Transaction. Our acceptance of any such divestiture requests or other restrictions on operations could diminish the benefits of the Transaction and result in additional transaction costs, loss of revenue or other effects associated with restrictions on business operations.

In addition, at any time before or after completion of the acquisition, the Antitrust Division of the U.S. Department of Justice or the U.S. Federal Trade Commission, any state or certain foreign governments could take various actions under antitrust, competition or similar laws, including seeking to enjoin the completion of the Transaction or to rescind the Transaction. Private parties also may seek to take legal action under antitrust, competition or similar laws under certain circumstances. A challenge to the Transaction on antitrust, competition or similar grounds may be made by any of these governmental or private parties and, if such a challenge is made, it is possible that we and the sellers will not prevail.

The Transaction is also subject to additional risks, contingencies and uncertainties that could result in delays to completion of the Transaction, in the failure of the Transaction to be completed or in our inability to realize the anticipated benefits and synergies of the Transaction.

Completion of the Transaction is subject to certain additional closing conditions, including (i) the timely completion of restructuring transactions by the sellers, including the transfer of Vale Fertilizantes S.A.'s Cubatão business to Vale and its affiliates; (ii) the achievement of certain additional specified regulatory and operational milestones; and (iii) the absence of governmental actions due to the recent water loss incident at our New Wales, Florida facility that result in a reduction or suspension of operations or increased operating costs at the facility and would be reasonably be expected to materially adversely impact Mosaic and its subsidiaries, taken as a whole. Any failure to satisfy these conditions could result in delays to completion of the Transaction or in the failure of the Transaction to be completed.

There are also additional risks, contingencies and uncertainties associated with the Transaction, including:

- the occurrence of any event, change or other circumstances that could give rise to the right of a party to terminate the acquisition agreement;
- that we may not be able to secure financing, or financing on satisfactory terms and in amounts sufficient to fund the cash portion of the purchase price without utilizing our other liquidity sources;
- that we will continue to incur additional costs and expend significant additional time and effort prior to the closing of the Transaction, and if the Transaction is delayed or not completed we may not be able to realize any benefit therefrom;
- possible distraction of our management from ongoing business operations due to the Transaction or the integration of Vale Fertilizantes following the Transaction;
- the impact of the issuance of our common stock as consideration in the Transaction on our current stockholders, including dilution of their ownership and voting interests; and

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- difficulties realizing the anticipated benefits, cost savings or synergies of the Transaction, including the risks that: the acquired business may not be integrated successfully or integration involves higher than projected costs, that we have underestimated the liabilities and obligations we are assuming in the Transaction, or that the anticipated synergies or cost or capital expenditure savings from the Transaction may not be fully realized or may take longer to realize than expected, including because of political and economic instability in Brazil or changes in government regulation or policy in Brazil, or because the combined operations do not perform as expected.

The success of our other strategic initiatives depends on our ability to effectively manage these initiatives, and to successfully integrate and grow acquired businesses.

In addition to the Transaction, we have other significant ongoing strategic initiatives including, principally our plans to expand the annual production capacity of our Potash business and MWSPC. These strategic initiatives involve capital and other expenditures of several billions of dollars over a number of years and require effective project management and, in the case of strategic acquisitions, successful integration. To the extent the processes we (or, for the MWSPC, we together with Ma'aden and SABIC) put in place to manage these initiatives or integrate and grow acquired businesses are not effective, our capital expenditure and other costs may exceed our expectations or the benefits we expect from these initiatives might not be fully realized.

We may fail to fully realize the anticipated benefits and cost savings of our long-term CF Ammonia Supply Agreement.

We use ammonia as a raw material in the production of our concentrated phosphate products. Under our long-term CF Ammonia Supply Agreement we have agreed to purchase approximately 545,000 to 725,000 tonnes of ammonia per year during a term that may extend until December 31, 2032 at a price to be determined by a formula based on the prevailing price of U.S. natural gas.

The success of this agreement will depend, in part, on our ability to realize cost savings from the agreement's natural gas based pricing. If the price of natural gas rises materially or the market price for ammonia falls outside of the range we currently anticipate over the term of the agreement, we may not realize a cost benefit from the agreement, or the cost of our ammonia under the agreement could be a competitive disadvantage. In addition, our ability to realize benefits and cost savings is subject to certain additional risks including whether CF successfully performs its obligations under the agreement over the life of its commitment and our ability to take delivery of the required minimum annual amount of ammonia over the life of our commitment. We discuss the risks associated with our obligations under this agreement in more detail earlier in this Risk Factors section.

Cyber attacks could disrupt our operations and have a material adverse impact on our business.

As a global company, we utilize and rely upon information technology systems in many aspects of our business, including internal and external communications and the management of our accounting, financial, production and supply chain functions. As we become more dependent on information technologies to conduct our operations, and as the number and sophistication of cyber attacks increase, the risks associated with cyber security increase. These risks apply both to us, and to third parties on whose systems we rely for the conduct of our business. Failure to effectively anticipate, prevent, detect and recover from the increasing number and sophistication of cyber attacks could result in theft, loss or misuse of, or damage or modification of our information, and cause disruptions or delays in our business, reputational damage and third-party claims, which could have a material adverse effect on our results of operations or financial condition.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Information regarding our plant and properties is included in Part I, Item 1, "Business," of this report.

Item 3. Legal Proceedings.

We have included information about legal and environmental proceedings in Note 21 of our Notes to Consolidated Financial Statements. This information is incorporated herein by reference.

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We are also subject to the following legal and environmental proceeding in addition to those described in Note 21 of our Notes to Consolidated Financial Statements:

- Nutrient Discharges into the Gulf of Mexico and Mississippi River Basin. On March 13, 2012, the Gulf Restoration Network, the Missouri Coalition for the Environment, the Iowa Environmental Council, the Tennessee Clean Water Network, the Minnesota Center for Environmental Advocacy, Sierra Club, the Waterkeeper Alliance, Inc., the Prairie Rivers Network, the Kentucky Waterways Alliance, the Environmental Law & Policy Center and the Natural Resources Defense Council, Inc. brought a lawsuit in the U.S. District Court for the Eastern District of Louisiana (the "Louisiana District Court") against EPA, seeking to require it to establish numeric nutrient criteria for nitrogen and phosphorous in the Mississippi River basin. In July 2011, EPA had denied the plaintiffs' July 2008 petition seeking such standards. On May 30, 2012, the Louisiana District Court granted our motion to intervene in this lawsuit.

On September 20, 2013, the Louisiana District Court issued a decision in this matter, holding that while EPA was required to respond directly to the petition and find that numeric nutrient criteria either were or were not necessary for the Mississippi River watershed, EPA had the discretion to decide this issue based on non-technical factors, including cost, policy considerations, administrative complexity and other issues. EPA appealed this decision to the Fifth Circuit Court of Appeals (the "Court of Appeals") in November 2013. The Court of Appeals issued a decision on April 7, 2015, holding in substantial part that EPA was not obligated to make a determination that numeric nutrient criteria are or are not necessary, provided EPA gives a reasonable explanation for its conclusion. The Court of Appeals remanded the case to the Louisiana District Court to decide whether EPA can meet that burden. On November 20, 2015 EPA filed a motion with the Louisiana District Court seeking summary judgment and on January 14, 2016, non-state intervenors including Mosaic filed a brief supporting EPA's motion. On December 15, 2016, the Louisiana District Court granted EPA's motion for summary judgment.

To the extent the plaintiffs appeal the Louisiana District Court decision, we intend to continue to defend vigorously EPA's position. In the event that EPA were to establish numeric nutrient criteria for nitrogen and phosphorous in the Mississippi River basin and the Gulf of Mexico, we cannot predict what its requirements would be or the effects it would have on us or our customers.

Item 4. Mine Safety Disclosures.

Information concerning mine safety violations or other regulatory matters required by Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Item 104 of Regulation S-K is included in Exhibit 95 to this report.

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PART II.

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

We have included information about the market price of, dividends on and the number of holders of our common stock under "Quarterly Results (Unaudited)" in the financial information that is incorporated by reference in this report in Part II, Item 8, "Financial Statements and Supplementary Data."

The principal stock exchange on which our common stock is traded is The New York Stock Exchange.

The following provides information related to equity compensation plans:

Plan category	Number of shares to be issued upon exercise of outstanding options, warrants and rights [(a)]	Weighted-average exercise price of outstanding options, warrants and rights [(b)]	Number of shares remaining available for future issuance under equity compensation plans (excluding shares reflected in first column)
Equity compensation plans approved by stockholders	4,117,721	$ 51.11	37,487,935
Equity compensation plans not approved by stockholders	—	—	—
Total	4,117,721	$ 51.11	37,487,935

(a) Includes grants of stock options, time-based restricted stock units, total shareholder return ("TSR") performance units, and performance shares. For purposes of the table above, the number of shares to be issued under a TSR performance unit or performance share reflects the maximum number of shares of our common stock that may be issued pursuant to such TSR performance unit or performance share. The actual number of shares to be issued under a TSR performance unit will depend on the change in the market price of our common stock over a three-year vesting period, with no shares issued if the market price of a share of our common stock at the vesting date plus dividends thereon is less than 50% of its market price on the date of grant and the maximum number issued only if the market price of a share of our common stock at the vesting date plus dividends thereon is at least twice its market price on the date of grant. The actual number of shares to be issued under a performance share depended on our achievement of controllable operating costs per tonne goals over a three-year performance period which ended on December 31, 2016. Achievement against these goals will be determined in the first quarter of 2017.

(b) Includes weighted average exercise price of stock options only.

Pursuant to our equity compensation plans, we have granted and may in the future grant employee stock options to purchase shares of common stock of Mosaic for which the purchase price may be paid by means of delivery to us by the optionee of shares of common stock of Mosaic that are already owned by the optionee (at a value equal to market value on the date of the option exercise). During the period covered by this report, no options to purchase shares of common stock of Mosaic were exercised for which the purchase price was so paid.

On May 14, 2015, we announced our 2015 Repurchase Program, which allows us to repurchase up to $1.5 billion of our Common Stock through open market purchases, accelerated share repurchase arrangements, privately negotiated transactions or otherwise. The 2015 Repurchase Program has no set expiration date. During the quarter ended December 31, 2016 no repurchases were made under this program. At December 31, 2016 we had approximately $850 million of repurchase authorization remaining under the program.

Item 6. Selected Financial Data.

We have included selected financial data for calendar years 2016, 2015 and 2014, the seven-month transition period ended December 31, 2013 and the twelve months ended March 31, 2013 and 2012 under "Five Year Comparison," in the financial information that is included in this report in Part II, Item 8, "Financial Statements and Supplementary Data." This information is incorporated herein by reference.

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Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

The Management's Discussion and Analysis of Financial Condition and Results of Operations listed in the Financial Table of Contents included in this report is incorporated herein by reference.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk.

We have included a discussion about market risks under "Market Risk" in the Management's Analysis that is included in this report in Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations". This information is incorporated herein by reference.

Item 8. Financial Statements and Supplementary Data.

Our Consolidated Financial Statements, the Notes to Consolidated Financial Statements, the report of our Independent Registered Public Accounting Firm, and the information under "Quarterly Results" listed in the Financial Table of Contents included in this report are incorporated herein by reference. All other schedules for which provision is made in the applicable accounting regulation of the SEC are not required under the related instructions or are inapplicable, and therefore, have been omitted.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosures.

None.

Item 9A. Controls and Procedures.

(a) Disclosure Controls and Procedures

We maintain disclosure controls and procedures designed to ensure that information required to be disclosed in our filings under the Securities Exchange Act of 1934 (the "Exchange Act") is (i) recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and (ii) accumulated and communicated to management, including our principal executive officer and our principal financial officer, to allow timely decisions regarding required disclosures. Our management, with the participation of our principal executive officer and our principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this Annual Report on Form 10-K. Our principal executive officer and our principal financial officer have concluded, based on such evaluations, that our disclosure controls and procedures were effective for the purpose for which they were designed as of the end of such period.

(b) Management's Report on Internal Control Over Financial Reporting

We have included management's report on internal control over financial reporting under "Management's Report on Internal Control Over Financial Reporting" listed in the Financial Table of Contents included in this report.

We have included our registered public accounting firm's attestation report on our internal controls over financial reporting under "Report of Independent Registered Public Accounting Firm" listed in the Financial Table of Contents included in this report.

This information is incorporated herein by reference.

(c) Changes in Internal Control Over Financial Reporting

Our management, with the participation of our principal executive officer and our principal financial officer, has evaluated any change in internal control over financial reporting that occurred during the quarter ended December 31, 2016 in accordance with the requirements of Rule 13a-15(d) promulgated by the SEC under the Exchange Act. There were no changes in internal control over financial reporting identified in connection with management's evaluation that occurred during the quarter ended December 31, 2016 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

None.

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PART III.

Item 10. Directors, Executive Officers and Corporate Governance.

The information contained under the headings “Proposal No. 1—Election of Directors,” “Corporate Governance—Committees of the Board of Directors,” and “Section 16(a) Beneficial Ownership Reporting Compliance” included in our definitive proxy statement for our 2017 annual meeting of stockholders and the information contained under “Executive Officers of the Registrant” in Part I, Item 1, “Business,” in this report is incorporated herein by reference.

We have a Code of Business Conduct and Ethics within the meaning of Item 406 of Regulation S-K adopted by the SEC under the Exchange Act that applies to our principal executive officer, principal financial officer and principal accounting officer. Our Code of Business Conduct and Ethics is available on Mosaic’s website (www.mosaicco.com), and we intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding any amendment to, or waiver from, a provision of our code of ethics by posting such information on our website. The information contained on Mosaic’s website is not being incorporated herein.

Item 11. Executive Compensation.

The information under the headings “Director Compensation”, “Executive Compensation”, and “Compensation Committee Interlocks and Insider Participation” included in our definitive proxy statement for our 2017 annual meeting of stockholders is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information under the headings “Beneficial Ownership of Securities” and “Certain Relationships and Related Transactions” included in our definitive proxy statement for our 2017 annual meeting of stockholders is incorporated herein by reference. The table set forth in Part II, Item 5, “Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities,” of this report is also incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information under the headings “Corporate Governance—Board Independence,” “Corporate Governance—Committees of the Board of Directors,” “Corporate Governance—Other Policies Relating to the Board of Directors—Policy and Procedures Regarding Transactions with Related Persons,” and “Certain Relationships and Related Transactions” included in our definitive proxy statement for our 2017 annual meeting of stockholders is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services.

The information included under “Audit Committee Report and Payment of Fees to Independent Registered Public Accounting Firm—Fees Paid to Independent Registered Public Accounting Firm” and “Audit Committee Report and Payment of Fees to Independent Registered Public Accounting Firm—Pre-approval of Independent Registered Public Accounting Firm Services” included in our definitive proxy statement for our 2017 annual meeting of stockholders is incorporated herein by reference.

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PART IV.
Item 15. Exhibits and Financial Statement Schedules.

(a) (1) Consolidated Financial Statements filed as part of this report are listed in the Financial Table of Contents included in this report and incorporated by reference in this report in Part II, Item 8, "Financial Statements and Supplementary Data."

(2) All schedules for which provision is made in the applicable accounting regulations of the SEC are listed in this report in Part II, Item 8, "Financial Statements and Supplementary Data."

(3) Reference is made to the Exhibit Index beginning on page E-1 hereof.

(b) Exhibits

Reference is made to the Exhibit Index beginning on page E-1 hereof.

(c) Summarized financial information of 50% or less owned persons is included in Note 8 of Notes to Consolidated Financial Statements. Financial statements and schedules are omitted as none of such persons are significant under the tests specified in Regulation S-X under Article 3.09 of general instructions to the financial statements.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

THE MOSAIC COMPANY
(Registrant)

/s/ James "Joc" C. O'Rourke
James "Joc" C. O'Rourke
Chief Executive Officer and President
Date: February 15, 2017

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Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

Name	Title	Date
/s/ James "Joc" C. O'Rourke James "Joc" C. O'Rourke	Chief Executive Officer and President and Director (principal executive officer)	February 15, 2017
/s/ Richard L. Mack Richard L. Mack	Executive Vice President and Chief Financial Officer (principal financial officer and principal accounting officer)	February 15, 2017
* Robert L. Lumpkins	Chairman of the Board of Directors	February 15, 2017
* Nancy E. Cooper	Director	February 15, 2017
* Gregory L. Ebel	Director	February 15, 2017
* Timothy S. Gitzel	Director	February 15, 2017
* Denise C. Johnson	Director	February 15, 2017
* Emery N. Koenig	Director	February 15, 2017
* William T. Monahan	Director	February 15, 2017
* James L. Popowich	Director	February 15, 2017
* David T. Seaton	Director	February 15, 2017

*	Director	February 15, 2017
Steven M. Seibert		
*	Director	February 15, 2017
Kelvin R. Westbrook		

*By:

/s/ Richard L. Mack
Richard L. Mack
Attorney-in-Fact

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Exhibit Index

Exhibit No.	Description	Incorporated Herein by Reference to	Filed with Electronic Submission
2.i.	Agreement and Plan of Merger and Contribution, dated as of January 26, 2004, by and among IMC Global Inc. (now known as Mosaic Global Holdings Inc.), Global Nutrition Solutions, Inc. (now known as The Mosaic Company ("Mosaic"), as successor by merger to MOS Holdings Inc. ("MOS Holdings")), GNS Acquisition Corp., Cargill, Incorporated ("Cargill") and Cargill Fertilizer, Inc., as amended by Amendment No. 1 to Agreement and Plan of Merger and Contribution, dated as of June 15, 2004, and as further amended by Amendment No. 2 to Agreement and Plan of Merger and Contribution, dated as of October 18, 2004 (1)	Exhibit 2.1 to Mosaic's Current Report on Form 8-K dated October 22, 2004, and filed on October 28, 2004(2)	
2.ii	Form of Merger and Distribution Agreement, dated January 18, 2011, by and among MOS Holdings (now known as Mosaic), Cargill, Mosaic (formerly known as GNS II (U.S.) Corp. ("GNS")), GNS Merger Sub LLC, and, for the limited purposes set forth therein, the Margaret A. Cargill Foundation, the Acorn Trust, the Lilac Trust and the Anne Ray Charitable Trust(1)	Annex A to the proxy statement/prospectus forming a part of the Registration Statement on Form S-4 filed by GNS pursuant to Rule 424(b)(3) of the Securities Act on April 11, 2011(3)	
2.iii.	Form of Tax Agreement, dated January 18, 2011, by and among MOS Holdings (now known as Mosaic), Mosaic, and Cargill (the "Tax Agreement")	Annex F to the proxy statement/prospectus forming a part of the Registration Statement on Form S-4 filed by GNS on February 4, 2011(3)	
2.iv.	Amendment, dated May 24, 2011, to Tax Agreement	Exhibit 2.1 to Mosaic's Current Report on Form 8-K12B dated May 24, 2011 and filed on May 25, 2011(2)	
2.v.	Stock Purchase Agreement dated as of December 19, 2016, among Mosaic, Vale S.A. and Vale Fertilizer Netherlands B.V.(1)	Exhibit 2.1 to Mosaic's Current Report on Form 8-K dated and filed on December 19, 2016(2)	
2.vi.	Form of Investor Agreement by and among Mosaic, Vale Fertilizer Netherlands B.V. and Vale S.A.(1)	Exhibit 2.2 to Mosaic's Current Report on Form 8-K dated and filed on December 19, 2016(2)	
3.i.	Restated Certificate of Incorporation of Mosaic, effective May 19, 2016	Exhibit 3.i to Mosaic's Current Report on Form 8-K dated May 19, 2016 and filed on May 23,	

		2016(2)
3.ii.	Amended and Restated Bylaws of Mosaic, effective May 19, 2016	Exhibit 3.ii to Mosaic's Current Report on Form 8-K dated May 19, 2016 and filed on May 23, 2016(2)
4.i	Second Amended and Restated Credit Agreement dated as of November 18, 2016, among Mosaic, Wells Fargo Bank, National Association, as administrative agent, U.S. Bank National Association, as syndication agent, and the lenders party thereto	Exhibit 4.i to Mosaic's Current Report on Form 8-K dated November 18, 2016 and filed on November 21, 2016(2)
4.ii.	Indenture dated as of October 24, 2011, between Mosaic and U.S. Bank National Association, as trustee	Exhibit 4.i. to Mosaic’s Current Report on Form 8-K dated October 24, 2011 and filed on October 24, 2011(2)

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Exhibit No.	Description	Incorporated Herein by Reference to	Filed with Electronic Submission
4.iii.	Registrant hereby agrees to furnish to the Commission, upon request, all other instruments defining the rights of holders of each issue of long-term debt of the Registrant and its consolidated subsidiaries		
10.iii.a.[4]	The Mosaic Company 2004 Omnibus Stock and Incentive Plan (the "Omnibus Incentive Plan"), as amended October 8, 2009	Appendix A to Mosaic's Proxy Statement dated August 25, 2009[2]	
10.iii.a.1[4]	Form of Amendment dated May 11, 2011, to the Omnibus Incentive Plan	Exhibit 10.iii.u. to Mosaic's Annual Report on Form 10-K for the Fiscal Year ended May 31, 2011[2]	
10.iii.a.2[4]	Form of Employee Non-Qualified Stock Option under the Omnibus Incentive Plan, approved July 6, 2006	Exhibit 99.3. to Mosaic's Current Report on Form 8-K dated August 2, 2006, and filed on August 2, 2006[2]	
10.iii.a.3[4]	Form of Employee Non-Qualified Stock Option under the Omnibus Incentive Plan, approved July 30, 2008	Exhibit 10.iii.a. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended August 31, 2008[2]	
10.iii.a.4[4]	Form of Employee Nonqualified Stock Option under the Omnibus Incentive Plan, approved July 20, 2011	Exhibit 10.iii.b. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended August 31, 2011[2]	
10.iii.a.5[4]	Form of Director Restricted Stock Unit Award Agreement under the Omnibus Incentive Plan, approved October 9, 2008	Exhibit 10.iii.c. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended November 30, 2008[2]	
10.iii.a.6[4]	Form of Employee Restricted Stock Unit Award Agreement under the Omnibus Incentive Plan, approved March 17, 2014	Exhibit 10.iii.a. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended March 31, 2014[2]	
10.iii.a.7[4]	Form of Performance Unit Award Agreement under the Omnibus Incentive Plan, approved March 17, 2014	Exhibit 10.iii.b. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended March 31, 2014[2]	
10.iii.a.8[4]	Form of Performance Share Award Agreement under the Omnibus Incentive Plan, approved March 27, 2014	Exhibit 10.iii.d. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended March 31, 2014[2]	
10.iii.b.1[4]	Description of Mosaic Management Incentive Program	Exhibit 10.iii.c. to Mosaic's Annual Report on Form 10-K for the year ended December 31, 2015[2]	

10.iii.b.2[4]	Description of Modification, approved March 3, 2016, to Mosaic Management Incentive Program	Exhibit 10.iii.c.i to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period Ended June 30, 2016[2]
10.iii.c.1[4]	Form of Mosaic Nonqualified Deferred Compensation Plan, as amended and restated effective October 9, 2008	Exhibit 10.iii.b. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended November 30, 2008[2]

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Exhibit No.	Description	Incorporated Herein by Reference to	Filed with Electronic Submission
10.iii.c.2[4]	Form of Amendment dated April 13, 2011, to the Mosaic Nonqualified Deferred Compensation Plan, as amended and restated effective October 9, 2008	Exhibit 10.iii.r. to Mosaic's Annual Report on Form 10-K for the Fiscal Year ended May 31, 2011[2]	
10.iii.c.3[4]	Mosaic LTI Deferral Plan	Exhibit 10.1 to Mosaic's Current Report on Form 8-K dated March 5, 2015 and filed on March 11, 2015[2]	
10.iii.d.1[4]	Form of Senior Management Severance and Change in Control Agreement, effective April 1, 2014	Exhibit 10.iii.e to the Quarterly Report on Form 10-Q for the Quarterly Period ended March 31, 2014[2]	
10.iii.d.2[4]	Form of Amendment to Senior Management Severance and Change in Control Agreement	Exhibit 10.1 to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended September 30, 2015[2]	
10.iii.d.3[4]	Form of expatriate agreement dated May 4, 2012 between Mosaic and an executive officer		X
10.iii.e.1[4]	Form of Agreement between Cargill and Mosaic relating to certain former Cargill employees' participation in the Cargill International Pension Plan	Exhibit 10.iii.b. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended August 31, 2012[2]	
10.iii.e.2[4]	Form of Supplemental Agreement between Mosaic and certain former participants in the Cargill International Pension Plan	Exhibit 10.iii.x. to Mosaic's Annual Report on Form 10-K of Mosaic for the fiscal year ended May 31, 2013[2]	
10.iii.f.[4]	Form of Indemnification Agreement between Mosaic and its directors and executive officers	Exhibit 10.iii. to Mosaic's Current Report on Form 8-K dated October 8, 2008, and filed on October 14, 2008[2]	
10.iii.g.[4]	Summary of Board of Director Compensation of Mosaic		X
10.iii.h.[4]	Description of Executive Physical Program	Fourth Paragraph of Item 1.01 of Mosaic's Current Report on Form 8-K dated May 26, 2005, and filed on June 1, 2005[2]	
10.iii.i.[4]	Summary of executive life and disability plans	The material under “Compensation Discussion and Analysis—Elements of Compensation—Executive Life and Disability Plans” in Mosaic's Proxy Statement dated April	

	2, 2014[2]		
10.iii.j.[4]	Description of Executive Financial Planning Program		X

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Exhibit No.	Description	Incorporated Herein by Reference to	Filed with Electronic Submission
10.iii.k.[4]	The Mosaic Company 2014 Stock and Incentive Plan (the "2014 Incentive Plan")	Appendix B to Mosaic's Proxy Statement dated April 2, 2014[2]	
10.iii.k.1[4]	Form of Non-Qualified Stock Option under the 2014 Incentive Plan, approved March 5, 2015	Exhibit 10.iii.a. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended March 31, 2015[2]	
10.iii.k.2[4]	Form of Non-Qualified Stock Option under the 2014 Incentive Plan, approved March 2, 2016	Exhibit 10.iii.a. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended March 31, 2016[2]	
10.iii.k.3[4]	Form of Employee Restricted Stock Unit Award Agreement under the 2014 Incentive Plan, approved March 5, 2015	Exhibit 10.iii.b. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended March 31, 2015[2]	
10.iii.k.4[4]	Form of Employee Restricted Stock Unit Award Agreement under the 2014 Incentive Plan, approved March 2, 2016	Exhibit 10.iii.e. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended March 31, 2016[2]	
10.iii.k.5[4]	Form of Employee TSR Performance Unit Award Agreement under the 2014 Incentive Plan, approved March 5, 2015	Exhibit 10.iii.c. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended March 31, 2015[2]	
10.iii.k.6[4]	Form of Executive TSR Performance Unit Award Agreement under the 2014 Incentive Plan, approved March 5, 2015	Exhibit 10.iii.d. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended March 31, 2015[2]	
10.iii.k.7[4]	Form of Executive TSR Performance Unit Award Agreement under the 2014 Incentive Plan, approved March 2, 2016	Exhibit 10.iii.b. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended March 31, 2016[2]	
10.iii.k.8[4]	Form of Executive ROIC Performance Unit Award Agreement under the 2014 Incentive Plan, approved March 5, 2015	Exhibit 10.iii.e. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended March 31, 2015[2]	
10.iii.k.9[4]	Form of Employee ROIC Performance Unit Award Agreement under the 2014 Incentive Plan, approved March 2, 2016	Exhibit 10.iii.d. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended March 31,	

		2016[2]
10.iii.k.10[4]	Form of Executive ROIC Performance Unit Award Agreement under the 2014 Incentive Plan, approved March 2, 2016	Exhibit 10.iii.c. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended March 31, 2016[2]
10.iii.k.11[4]	Form of Director Restricted Stock Unit Award Agreement under the 2014 Stock and Incentive Plan	Exhibit 10.iii.ii. to Mosaic's Annual Report on Form 10-K for the year ended December 31, 2015[2]
10.iii.k.12[4]	Form of Director Restricted Stock Unit Award Agreement under The Mosaic Company 2014 Stock and Incentive Plan, approved May 19, 2016	Exhibit 10.iii.kk to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period Ended June 30, 2016[2]

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Exhibit No.	Description	Incorporated Herein by Reference to	Filed with Electronic Submission
10.iv.a	Form of Equity Support, Subordination and Retention Agreement dated June 30, 2014 by Mosaic, Saudi Arabian Mining Company, Saudi Basic Industries Corporation, Mizuho Corporate Bank, Ltd., as Intercreditor Agent for certain Finance Parties, and Riyad Bank, London Branch, as Offshore Security Trustee and Agent for certain secured parties	Exhibit 10.i. to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period ended June 30, 2014[(2)]	
10.iv.b	Form of Amendment and Restatement Agreement relating to an Equity Support, Subordination and Retention Agreement dated January 3, 2017 by Mosaic, Mosaic Phosphates, B.V., Saudi Arabian Mining Company, Saudi Basic Industries Corporation, Ma'aden Wa'ad Al Shamal Phosphate Company, Mizuho Bank, Ltd., as Intercreditor Agent for certain Finance Parties, and Riyad Bank, London Branch, as Offshore Security Trustee and Agent for certain secured parties		X
10.v.a	Consent Decree dated September 30, 2015 among the United States of America, the Florida Department of Environmental Protection, Mosaic Fertilizer, LLC and The Mosaic Company[(5)]	Exhibit 10.1. to Mosaic's Current Report on Form 8-K dated September 30, 2015 and filed on October 6, 2015[(2)]	
10.v.b	Description of Modifications to Consent Decree dated September 30, 2015 among the United States of America, the Florida Department of Environmental Protection, Mosaic Fertilizer, LLC and The Mosaic Company, filed as Exhibit 10.1 to the Current Report on Form 8-K of Mosaic dated September 30, 2015 and filed on October 6, 2015	Exhibit 10.v.i to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period Ended June 30, 2016[(2)]	
10.v.c	Consent Decree dated September 30, 2015 among the United States of America, the Louisiana Department of Environmental Quality, Mosaic Fertilizer, LLC and The Mosaic Company[(5)]	Exhibit 10.2. to Mosaic's Current Report on Form 8-K dated September 30, 2015 and filed on October 6, 2015[(2)]	
10.v.d	Description of Modifications to Consent Decree dated September 30, 2015 among the United States of America, the Louisiana Department of Environmental Quality, Mosaic Fertilizer, LLC and The Mosaic Company, filed as Exhibit 10.2 to the Current Report on Form 8-K of Mosaic dated September 30, 2015 and filed on October 6, 2015	Exhibit 10.v.ii to Mosaic's Quarterly Report on Form 10-Q for the Quarterly Period Ended June 30, 2016[(2)]	
21	Subsidiaries of the Registrant		X

23	Consent of KPMG LLP, independent registered public accounting firm for Mosaic	X
24	Power of Attorney	X
31.1	Certification of Chief Executive Officer Required by Rule 13a-14(a)	X
31.2	Certification of Chief Financial Officer Required by Rule 13a-14(a)	X
32.1	Certification of Chief Executive Officer Required by Rule 13a-14(b) and Section 1350 of Chapter 63 of Title 18 of the United States Code	X

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Exhibit No.	Description	Incorporated Herein by Reference to	Filed with Electronic Submission
32.2	Certification of Chief Financial Officer Required by Rule 13a-14(b) and Section 1350 of Chapter 63 of Title 18 of the United States Code		X
95	Mine Safety Disclosures		X
101	Interactive Data Files		X

(1) Mosaic agrees to furnish supplementally to the Commission a copy of any omitted schedules and exhibits to the extent required by rules of the Commission upon request.
(2) SEC File No. 001-32327
(3) Registration Statement No. 333-172076
(4) Denotes management contract or compensatory plan.
(5) Confidential information has been omitted from this Exhibit and filed separately with the Securities and Exchange Commission pursuant to a confidential treatment request under Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

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Management’s Discussion and Analysis of Financial Condition and Results of Operations

Introduction

The Mosaic Company (before or after the Cargill Transaction, as defined below, “Mosaic”, and with its consolidated subsidiaries, “we”, “us”, “our”, or the “Company”) is the parent company of the business that was formed through the business combination (“Combination”) of IMC Global Inc. and the Cargill Crop Nutrition fertilizer businesses of Cargill, Incorporated and its subsidiaries (collectively, “Cargill”) on October 22, 2004. In May 2011, Cargill divested its approximately 64% equity interest in us in the first of a series of transactions (collectively, the “Cargill Transaction”). Further information regarding this transaction is included in the Overview section of this Management’s Discussion and Analysis of Financial Condition and Results of Operations and in Note 18 of our Notes to Consolidated Financial Statements.

We produce and market concentrated phosphate and potash crop nutrients. We conduct our business through wholly and majority owned subsidiaries as well as businesses in which we own less than a majority or a non-controlling interest, including consolidated variable interest entities and investments accounted for by the equity method.

Beginning in 2015, we realigned our business segments (the "Realignment") to more clearly reflect our evolving business model. Our international distribution activities, which had previously been reported in our Phosphates business segment, were moved into a separate International Distribution segment. Intersegment eliminations, mark-to-market gains/losses on derivatives that had previously been reported in our Phosphates and Potash business segments prior to the Realignment, debt expenses, our Streamsong Resort® results of operations and our legacy Argentina and Chile results are included within Corporate, Eliminations and Other.

After the Realignment, we are organized into the following business segments:

Our Phosphates business segment includes mines and production facilities in Florida which produce concentrated phosphate crop nutrients and phosphate-based animal feed ingredients, and processing plants in Louisiana which produce concentrated phosphate crop nutrients. Additionally, the Phosphates segment has a 35% economic interest in a joint venture that owns a phosphate rock mine (the “Miski Mayo Mine”) in Peru and a 25% interest in Ma'aden Wa'ad Al Shamal Phosphate Company (the "MWSPC"), a joint venture to develop, own and operate integrated phosphate production facilities in the Kingdom of Saudi Arabia for which we will market approximately 25% of the production.

Our Potash business segment owns and operates potash mines and production facilities in Canada and the U.S. which produce potash-based crop nutrients, animal feed ingredients and industrial products. We are a member of Canpotex, Limited (“Canpotex”), an export association of Canadian potash producers through which we sell our Canadian potash outside of the U.S. and Canada.

Our International Distribution business segment provides our Phosphates segment and Potash segment, through Canpotex, market access to geographies outside North America. It consists of sales offices, fertilizer blending and bagging facilities, port terminals and warehouses in several key countries outside of North America, currently Brazil, Paraguay, India, and China. We also have a single superphosphate plant in Brazil that produces crop nutrients by mixing sulfuric acid with phosphate rock.

See Note 25 of our Consolidated Financial Statements in this report for segment results, adjusted to reflect the Realignment.

Key Factors that can Affect Results of Operations and Financial Condition

Our primary products, phosphate and potash crop nutrients, are, to a large extent, global commodities that are also available from a number of domestic and international competitors, and are sold by negotiated contracts or by reference to published market prices. The markets for our products are highly competitive, and the most important competitive factor for our products is delivered price. Business and economic conditions and governmental policies affecting the agricultural industry and customer sentiment are the most significant factors affecting worldwide demand for crop nutrients. The profitability of our businesses is heavily influenced by worldwide supply and demand for our products, which affects our sales prices and volumes. Our costs per tonne to produce our products are also heavily influenced by fixed costs associated with owning and operating our major facilities, significant raw material costs in our Phosphates business, and fluctuations in currency exchange rates.

Our products are generally sold based on the market prices prevailing at the time the sales contract is signed or through contracts which are priced at the time of shipment based on a formula. Additionally, in certain circumstances the final price of our products is determined after shipment based on the current market at the time the price is agreed to with the customer. Forward sales programs at fixed prices increase the lag between prevailing market prices and our average realized selling prices. The mix and parameters of these sales programs vary over time based on our marketing strategy, which considers factors that include, among others, optimizing our production and operating efficiency within warehouse limitations, as well as customer requirements. The use of forward sales programs and level of customer prepayments may vary from period to period due to changing supply and demand environments, seasonality, and market sentiments.

World prices for the key raw material inputs for concentrated phosphate products, including ammonia, sulfur and phosphate rock, have an effect on industry-wide phosphate prices and production costs. The primary feedstock for producing ammonia is natural gas, and costs for ammonia are generally highly dependent on the supply and demand balance for ammonia. The long-term ammonia supply agreement (the "CF Ammonia Supply Agreement") we entered into with CF Industries, Inc. (“CF”) in late 2013 is now effective and provides for U.S. natural gas-based pricing that is intended to lessen pricing volatility. We expect to begin purchasing under the agreement in the second half of 2017. If the price of natural gas rises or the market price for ammonia falls outside of the range anticipated at execution of the agreement, we may not realize a cost benefit from the natural gas based pricing over the term of the agreement, or the cost of our ammonia under the agreement could be a competitive disadvantage. Based on the prevailing market prices of natural gas and ammonia as of the date of this report, the difference between what we would pay under the agreement versus what we would pay for ammonia on the spot market is not material. However, we continue to expect that the agreement will provide us a competitive advantage over its term, including by providing a reliable long-term ammonia supply.

Sulfur is a global commodity that is primarily produced as a co-product of oil refining, where the market price is based primarily on the supply and demand balance for sulfur. We believe our current and future investments in sulfur transformation and transportation assets will enhance our competitive advantage. We produce and procure most of our phosphate rock requirements through either wholly or partly owned mines.

Our per tonne selling prices for potash are affected by shifts in the product mix, geography and customer mix. Our Potash business is significantly affected by Canadian resource taxes and royalties that we pay to the Province of Saskatchewan in order for us to mine and sell our potash products. In addition, cost of goods sold is affected by fluctuations in the Canadian dollar; the level of periodic inflationary pressures on resources in western Canada, where we produce most of our potash; natural gas costs for operating our potash solution mine at Belle Plaine, Saskatchewan; and the operating costs we incur to manage salt saturated brine inflows at our potash mine at Esterhazy, Saskatchewan which are affected by changes in the amount and pattern of the inflows, among other factors. We also incur capital costs to manage the brine inflows at Esterhazy.

We manage brine inflows at Esterhazy through a number of methods, primarily by reducing or preventing particular sources of brine inflow by locating the point of entry through the use of various technologies, including 3D seismic surveys, micro seismic monitoring, injecting calcium chloride into the targeted areas from surface, and grouting targeted areas from underground. We also pump brine out of the mine, which we impound in surface storage areas and dispose of by injecting it below the surface through the use of injection wells. Excess brine is also stored in mined-out areas of the mine, and the level of this stored brine fluctuates, from time to time, depending on the net inflow or net outflow rate. To date, our brine inflow and remediation efforts have not had a material impact on our production processes or volumes. In recent years, we have been investing in additional capacity and technology to manage the brine inflows. For example, we have significantly expanded our pumping capacity at Esterhazy in the last several years, introduced horizontal drilling capabilities, and have added brine injection capacity at a site that is remote from our current mine workings. These efforts allow us to be more disciplined and efficient in our approach to managing the brine inflow and to reduce our costs.

Our results of operations are also affected by changes in currency exchange rates due to our international footprint. The most significant currency impacts are generally from the Canadian dollar and the Brazilian real.

A discussion of these and other factors that affected our results of operations and financial condition for the periods covered by this Management's Discussion and Analysis of Financial Condition and Results of Operations is set forth in further detail below. This Management's Discussion and Analysis of Financial Condition and Results of Operations should also be read in conjunction with the narrative description of our business in Item 1, and the risk factors described in Item 1A, of Part I of this annual report on Form 10-K, and our Consolidated Financial Statements, accompanying notes and other information listed in the accompanying Financial Table of Contents.

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Throughout the discussion below, we measure units of production, sales and raw materials in metric tonnes which are the equivalent of 2,205 pounds, unless we specifically state that we mean short or long ton(s) which are the equivalent of 2,000 pounds and 2,240 pounds, respectively. In addition, we measure natural gas, a raw material used in the production of our products, in MMBTU, which stands for one million British Thermal Units (BTU). One BTU is equivalent to 1.06 Joules.

In the following table, there are certain percentages that are not considered to be meaningful and are represented by "NM".

Results of Operations

The following table shows the results of operations for the years ended December 31, 2016, 2015, and 2014:

	Years Ended December 31,			2016-2015		2015-2014	
(in millions, except per share data)	2016	2015	2014	Change	Percent	Change	Percent
Net sales	$7,162.8	$8,895.3	$9,055.8	$(1,732.5)	(19)%	$(160.5)	(2)%
Cost of goods sold	6,352.8	7,177.4	7,129.2	(824.6)	(11)%	48.2	1 %
Gross margin	810.0	1,717.9	1,926.6	(907.9)	(53)%	(208.7)	(11)%
Gross margin percentage	11.3 %	19.3 %	21.3 %				
Selling, general and administrative expenses	304.2	361.2	382.4	(57.0)	(16)%	(21.2)	(6)%
Gain on assets sold and to be sold	—	—	(16.4)	—	— %	16.4	NM
Carlsbad restructuring expense	—	—	125.4	—	— %	(125.4)	NM
Other operating expenses	186.8	77.9	123.4	108.9	140 %	(45.5)	(37)%
Operating earnings	319.0	1,278.8	1,311.8	(959.8)	(75)%	(33.0)	(3)%
Loss in value of share repurchase agreement	—	—	(60.2)	—	— %	60.2	NM
Interest expense, net	(112.4)	(97.8)	(107.6)	(14.6)	15 %	9.8	(9)%
Foreign currency transaction gain (loss)	40.1	(60.5)	79.1	100.6	(166)%	(139.6)	(176)%
Other expense	(4.3)	(17.2)	(5.8)	12.9	(75)%	(11.4)	197 %
Earnings from consolidated companies before income taxes	242.4	1,103.3	1,217.3	(860.9)	(78)%	(114.0)	(9)%
(Benefit from) provision for income taxes	(74.2)	99.1	184.7	(173.3)	(175)%	(85.6)	(46)%
Earnings from consolidated companies	316.6	1,004.2	1,032.6	(687.6)	(68)%	(28.4)	(3)%
Equity in net earnings (loss) of nonconsolidated companies	(15.4)	(2.4)	(2.2)	(13.0)	NM	(0.2)	9 %
Net earnings including noncontrolling interests	301.2	1,001.8	1,030.4	(700.6)	(70)%	(28.6)	(3)%
Less: Net earnings attributable to noncontrolling interests	3.4	1.4	1.8	2.0	143 %	(0.4)	(22)%
Net earnings attributable to Mosaic	$297.8	$1,000.4	$1,028.6	$(702.6)	(70)%	$(28.2)	(3)%
Diluted net earnings per share attributable to Mosaic	$0.85	$2.78	$2.68	$(1.93)	(69)%	$0.10	4 %
Diluted weighted average number of shares outstanding	351.7	360.3	375.6				

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Overview of the Years ended December 31, 2016, 2015, and 2014

Net earnings attributable to Mosaic for the years ended December 31, 2016 were $297.8 million, or $0.85 per diluted share, compared to 2015 net earnings of $1.0 billion, or $2.78 per diluted share, and $1.0 billion, or $2.68 per diluted share for 2014. Net earnings for 2016 included discrete income tax benefits of $54 million, or $0.16 per diluted share. The current year results include $135 million in other operating expenses, or $(0.40) per diluted share, related to items which are further discussed in the Other Income Statement Items section of Management's Discussion and Analysis of Financial Condition and Results of Operations. Reflected in current year results is the write-off of a capital project at one of our equity investments, of which our share was approximately $24 million, or $16 million after tax and $(0.05) per diluted share. In addition, we recorded $111 million, or $0.24 per diluted share, related to a foreign currency transaction gain and unrealized mark-to-market gains on derivatives in 2016. Our income tax rate is lower in 2016 compared to 2015 because our deductions are relatively fixed in dollars, while our profitability has been reduced.

Net earnings for 2015 included discrete income tax benefits of $47 million or $0.13 per diluted share. In addition, we recorded a foreign currency transaction loss of $61 million, or $(0.15) per diluted share, and unrealized mark-to-market losses on derivatives of $32 million, or $(0.08) per diluted share, in 2015.

Net earnings for 2014 were negatively impacted by $33 million, or ($0.05) per share, comprised of a charge of $60 million, or ($0.16) per diluted share, related to the change in value of our share repurchase agreements with certain Cargill family member trusts and certain trusts that we refer to as the MAC Trusts ("Share Repurchase Agreements"), pre-tax charges of $125 million, or ($0.19) per diluted share, related to the discontinuance of MOP production at our Carlsbad, New Mexico mine, and discrete income tax benefits of approximately $152 million, or $0.40 per diluted share, which were primarily related to the acquisition of Archer Daniels Midland Company's ("ADM") fertilizer distribution business in Brazil and Paraguay (the "ADM Acquisition") and the sale of our distribution business in Argentina. In addition, we recorded a foreign currency transaction gain of $80 million, or $0.15 per diluted share, and unrealized mark-to-market losses on derivatives of $34 million, or $(0.06) per diluted share, in 2014.

Additional significant factors that affected our results of operations and financial condition in 2016, 2015 and 2014 are listed below. These factors are discussed in more detail in the following sections of this Management's Discussion and Analysis of Financial Condition and Results of Operations.

Year ended December 31, 2016

Operating earnings for the year ended December 31, 2016 were unfavorably impacted by significantly lower average selling prices for phosphates and potash, partially offset by lower phosphates raw material costs and higher phosphates sales volumes.

Our net sales and operating results for the year ended December 31, 2016 were negatively impacted by a decline in phosphates average selling prices compared to the prior year. Phosphates average selling prices in the current year were unfavorably impacted by cautious purchasing behavior in the first half of the year, driven by aggressive pricing by global producers and lower grain and oilseed prices. Selling prices were also influenced by lower raw material prices driven by global supply and demand of sulfur and ammonia. In the second half of 2016, sales volumes increased due to low phosphate pipeline inventory levels and concerns about tightness in product availability. A significant portion of the increase in our sales volumes was from sales of MicroEssentials® in North America and Brazil.

Lower potash average selling prices unfavorably impacted net sales and operating results in the current year compared to the prior year. In 2016, potash average selling prices were negatively impacted by the global competitive environment, driven by a strengthening of the U.S. dollar versus significantly devalued local currencies of other producers. Potash prices have also been influenced by lower global grain and oilseed prices. Delays in settlement of the Chinese potash contract and high inventory levels early in 2016 also added downward pressure to potash selling prices during the first half of 2016.

In the fourth quarter of 2016, average selling prices for phosphates and potash began to increase due to a change in sentiment that helped drive higher demand. These increases have continued in 2017, but with their benefit partially offset by higher raw material costs.

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Other highlights in 2016:

During 2016, we took the following steps toward achieving our strategic priorities:

- Growth: Grow our production of essential crop nutrients and operate with increasing efficiency

- On December 19, 2016, we entered into an agreement to acquire Vale S.A.'s global phosphate and potash operations conducted through Vale Fertilizantes S.A. for a purchase price valued at $2.5 billion, consisting of $1.25 billion in cash and 42,286,874 shares of Mosaic common stock. When completed, this transaction will increase our finished phosphates capacity by approximately five million tonnes and our finished potash capacity by approximately 500,000 tonnes. The assets we will acquire upon closing include five Brazilian phosphate rock mines; four chemical plants; a potash mine in Brazil; an additional 40% economic interest in the Miski Mayo Mine, which will increase our aggregate interest to 75%; a Kronau, Saskatchewan potash project; and a 20% interest in the Tiplam port. We also have an option under the agreement to purchase a potash mine in Rio Colorado, Argentina. Upon closing, Mosaic expects to become the leading fertilizer production and distribution company in Brazil. On February 6, 2017 we received notice from the U.S. Federal Trade Commission that it had granted early termination of the applicable waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, satisfying one of the conditions to closing. The transaction is expected to close in late 2017 and is subject to the satisfaction of other regulatory and closing conditions.

- During 2016, we made equity contributions of $220 million to MWSPC, our joint venture with Saudi Arabian Mining Company ("Ma'aden") and Saudi Basic Industries Corporation ("SABIC") to develop, own and operate integrated phosphate production facilities in the Kingdom of Saudi Arabia. Our cash investment at December 31, 2016 and as of the date of this report, was approximately $707 million. We currently estimate that our total cash investment in MWSPC, including the amount we have invested to date, will approximate $850 million. We expect our future cash contributions to be approximately $143 million. We estimate the total cost to develop and construct the integrated phosphate production facilities to be approximately $8.0 billion. If the total project cost exceeds $8.0 billion, our investment is expected to increase by 25% of the amount above $8.0 billion. We expect this amount to be funded through external debt facilities, and investments by the joint venture members.

- We continued the expansion of capacity in our Potash segment with the K3 shafts at our Esterhazy mine, which we expect to begin mining potash ore in 2017 and, following ramp-up, to add an estimated 0.9 million tonnes to our potash operational capacity. Once completed, this will provide us the opportunity to mitigate future brine inflow management costs and risk.

- On November 15, 2016 the U.S. Army Corps of Engineers issued the final permit that will allow us to extend our mining operations from our South Pasture mine onto the adjoining South Pasture Extension, which includes land parcels totaling approximately 7,500 acres. We believe this will enable us to extend our mining operations at South Pasture for an additional 14 years.

- In 2016, we commenced a proving run at our Belle Plaine, Saskatchewan potash mine which was completed on February 7, 2017, and will be taken into account in determining our Canpotex allocation in the second half of 2017.

- Market Access: Expand our reach and impact by continuously strengthening our distribution network

- We had record sales volumes of 6.8 million tonnes in our International Distribution segment in 2016.

- Innovation: Build on our industry-leading products, process and sustainability innovations

- We completed our investments to expand our MicroEssentials® capacity, adding an incremental 1.2 million tonnes and bringing our total capacity to 3.5 million tonnes in 2017. Our sales volumes of MicroEssentials® products in 2016 were 2.2 million tonnes, including sales from our International Distribution segment, which represents an increase of 23% over 2015.

- Total Shareholder Return: Deliver strong financial performance and provide meaningful returns to our shareholders

- On November 18, 2016 we upsized and extended our prior $1.5 billion unsecured revolving credit facility, and refinanced our prior term loan facility, with a new unsecured five-year credit facility comprised of a revolving credit facility of up to $2.0 billion and a $720 million term loan facility.

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- We entered into, and in March 2016 settled, an accelerated share repurchase transaction under which we received a total of 2,766,588 shares of our Common Stock in exchange for a payment of $75 million. The transaction was conducted under the $1.5 billion repurchase program authorized by our Board of Directors in May 2015 (the "2015 Repurchase Program").
- We continued to execute against our cost saving initiatives in ways that are positively impacting financial results:
We are on track to meet the goal we set to achieve $500 million in pre-tax cost savings by the end of 2018. We are approximately 80% of the way toward meeting this goal.
We are targeting an additional $75 million in savings in our support functions. We realized some of these savings in 2016 and expect to realize most of the remainder by the end of 2017. Selling, general and administrative expenses in 2016 were the lowest amount in the last ten years, benefiting from our ongoing expense management initiatives.
We are managing our capital through the reduction, deferral or elimination of certain capital spending. Capital expenditures in 2016 were the lowest in over five years.
In July 2016, we temporarily idled our Colonsay, Saskatchewan potash mine for the remainder of 2016 in light of reduced customer demand while adapting to challenging potash market conditions. Our lower-cost Esterhazy and Belle Plaine mines, in combination with existing inventory, allowed us to meet our short-term potash supply needs for 2016. We resumed production at Colonsay in January 2017.
- Subsequent to year-end, we announced that our Board of Directors has approved a reduction in our target annual dividend to $0.60 per share, effective with our next declaration, expected in May 2017.

Year ended December 31, 2015

Operating earnings for the year ended December 31, 2015 were unfavorably impacted by lower average selling prices for phosphates, lower Potash sales volumes and higher Canadian Resource Tax expense as a result of Saskatchewan law changes enacted in 2015 regarding the treatment of capital expenditures. This was partially offset by lower costs in our Potash segment from our cost saving initiatives and the benefit from a weaker Canadian dollar compared to the same period in 2014.

In 2015, lower Potash sales volumes were primarily driven by lower sales volumes in North America as a result of excess supply and lower demand due to cautious customers' purchasing behavior. In the first half of 2015, there were increased imports into North America as foreign currency fluctuations allowed foreign competitors the ability to more economically ship product into North America. In the second half of the year, customers delayed purchases as a result of cautious purchasing behavior, when compared to the prior year.

Phosphates average selling prices started 2015 higher than the prior year due in part to the reduction in supply from the closure of certain phosphate U.S. production facilities owned by our competitors. However, in the second half of 2015, phosphates average selling prices started to decline below the prior year's level, primarily due to lower raw material costs and lower commodity prices in 2015.

Year ended December 31, 2014

Operating earnings for the year ended December 31, 2014 reflected net costs of approximately $109.0 million related to improving utilization of our asset base, including our decision to permanently discontinue production of MOP at our Carlsbad, New Mexico facility, sell our Hersey salt operations and exit our distribution businesses in Argentina and Chile.

Operating earnings were favorably impacted by Phosphates sales volumes which were 9.3 million tonnes in 2014 compared to 8.3 million tonnes in 2013. On March 17, 2014, we completed the acquisition of the Florida phosphate assets and assumption of certain liabilities (the "CF Phosphate Assets Acquisition") of CF. The increase in sales volumes from the prior year was primarily due to more tonnes available following this acquisition. Lower raw material costs also favorably impacted operating earnings in 2014 compared to 2013.

Potash sales volumes were 9.0 million tonnes for the year ended December 31, 2014, compared to 7.7 million tonnes in the prior year as we experienced an increase in demand in 2014 compared to 2013. In 2013, Potash sales volumes were constrained by sentiments in the market driving customers to purchase fertilizer only as needed, combined with delayed purchases in anticipation of the signing of supply contracts in China. Despite strong demand, and the fact that potash selling

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prices grew stronger each quarter in 2014, potash selling prices did not recover to the price levels seen in the first half of 2013. Potash selling prices began to decrease in 2013 due to uncertainty in the potash market and weak customer sentiment, which was exacerbated in July 2013, when one of our global competitors announced its intention to increase production volumes and corresponding sales volumes.

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Phosphates Net Sales and Gross Margin

The following table summarizes Phosphates net sales, gross margin, sales volumes and certain other information:

	Years Ended December 31,			2016-2015		2015-2014	
(in millions, except price per tonne or unit)	2016	2015	2014	Change	Percent	Change	Percent
Net sales:							
North America	$2,133.2	$2,766.4	$2,632.9	$(633.2)	(22.9)%	$133.5	5.1 %
International	1,577.7	1,853.8	2,004.2	(276.1)	(14.9)%	(150.4)	(7.5)%
Total	3,710.9	4,620.2	4,637.1	(909.3)	(19.7)%	(16.9)	(0.4)%
Cost of goods sold	3,361.1	3,783.1	3,700.0	(422.0)	(11.2)%	83.1	2.2 %
Gross margin	$349.8	$837.1	$937.1	$(487.3)	(58.2)%	$(100.0)	(10.7)%
Gross margin as a percentage of net sales	9.4 %	18.1 %	20.2 %				
Sales volume (in thousands of metric tonnes)							
Crop Nutrients							
North America - DAP/MAP [(a)]	3,590	3,604	3,337	(14)	(0.4)%	267	8.0 %
International - DAP/MAP [(a)(b)]	3,255	3,392	3,451	(137)	(4.0)%	(59)	(1.7)%
MicroEssentials® [(b)]	2,300	1,782	1,850	518	29.1 %	(68)	(3.7)%
Feed and Other [(b)]	535	567	617	(32)	(5.6)%	(50)	(8.1)%
Total Phosphates Segment Tonnes	9,680	9,345	9,255	335	3.6 %	90	1.0 %
Average selling price per tonne:							
DAP (FOB plant)	$335	$443	$449	$(108)	(24.4)%	$(6)	(1.3)%
Average cost per unit consumed in cost of goods sold:							
Ammonia (metric tonne)	$307	$439	$479	$(132)	(30.1)%	$(40)	(8.4)%
Sulfur (long ton)	$105	$151	$133	$(46)	(30.5)%	$18	13.5 %
Blended rock (metric tonne)	$61	$61	$63	$—	— %	$(2)	(3.2)%
Production volume (in thousands of metric tonnes)	9,520	9,462	9,277	58	0.6 %	185	2.0 %

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(a) Excludes MicroEssentials®.

(b) Includes sales volumes to our International Distribution Segment.

Year Ended December 31, 2016 compared to Year Ended December 31, 2015

The Phosphates segment’s net sales were $3.7 billion for the year ended December 31, 2016 compared to $4.6 billion for the same period a year ago. Significantly lower average selling prices had a negative impact on net sales of approximately $1.0 billion, which was partially offset by the favorable impact of higher sales volumes of approximately $100 million.

Our average DAP selling price was $335 per tonne for the year ended December 31, 2016, a decrease of $108 per tonne compared with the same period in 2015 due to the factors discussed in the Overview.

The Phosphates segment’s sales volumes increased to 9.7 million tonnes for the year ended December 31, 2016, compared to 9.4 million tonnes in the same period in 2015. The increase was driven by an increase in MicroEssentials® sales volumes, partially offset by lower international sales volumes of DAP and MAP. Higher sales volumes of MicroEssentials® reflect growth in our premium product channels.

Gross margin for the Phosphates segment decreased to $349.8 million in the current year compared with $837.1 million for the prior year. Lower average selling prices resulted in a decrease to gross margin of approximately $1.0 billion. This was partially offset by approximately $30 million related to favorable sales volumes and lower raw material costs of

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approximately $400 million. Lower plant spending and the timing of turnarounds also had a favorable impact of approximately $50 million in the current year period. As a result of these factors, gross margin as a percentage of net sales decreased to 9% for the year ended December 31, 2016 compared to 18% for the same period a year ago.

The average consumed price for ammonia for our North American operations decreased to $307 per tonne in 2016 from $439 a year ago. The average consumed price for sulfur for our North American operations decreased to $105 per long ton for the year ended December 31, 2016 from $151 in the same period a year ago. The purchase price of these raw materials is driven by global supply and demand. The average consumed cost of purchased and produced rock was $61 per tonne in the current year, comparable to the cost in the same period a year ago. The percentage of phosphate rock purchased from our Miski Mayo Mine included in cost of goods sold in our North American operations was 9% for 2016 compared to 7% for 2015.

The Phosphates segment's production of crop nutrient dry concentrates and animal feed ingredients was 9.5 million tonnes for the years ended December 31, 2016 and 2015, resulting in an operating rate of 81% for processed phosphate production for both years.

Our phosphate rock production was 14.2 million tonnes in the current year compared with 14.5 million tonnes in the same period a year ago.

Year Ended December 31, 2015 compared to Year Ended December 31, 2014

The Phosphates segment's net sales of $4.6 billion for the year ended December 31, 2015 were comparable to the same period in 2014. Lower average selling prices had a negative impact on net sales of approximately $35 million, which was partially offset by the favorable impact of higher sales volumes of approximately $25 million.

Our average DAP selling price was $443 per tonne for the year ended December 31, 2015, a decrease of $6 per tonne compared with the same period of 2014, due to the factors discussed in the Overview.

The Phosphates segment's sales volumes increased to 9.4 million tonnes for the year ended December 31, 2015, compared to 9.3 million tonnes in the same period of 2014. This increase was driven by sales in North America due to additional volume benefits from a full year of production from the assets acquired in the CF Phosphates Asset Acquisition.

Gross margin for the Phosphates segment decreased to $837.1 million in 2015 compared with $937.1 million for the year ended December 31, 2014. Lower average selling prices negatively impacted gross margin by approximately $35 million. Higher sulfur costs resulted in an unfavorable impact of approximately $75 million partially offset by the favorable impact of lower ammonia costs of approximately $60 million, in each case when compared to the prior year period. Higher plant spending and the timing of turnarounds also had a negative impact of approximately $50 million for the year ended December 31, 2015. As a result of these factors, gross margin as a percentage of net sales decreased to 18% for the year ended December 31, 2015 compared to 20% for the same period of 2014.

The average consumed price for ammonia for our North American operations decreased to $439 per tonne in 2015 from $479 in the same period of 2014. The average consumed price for sulfur for our North American operations increased to $151 per long ton for the year ended December 31, 2015 from $133 in the same period of 2014. The purchase price of these raw materials is driven by global supply and demand. The average consumed cost of purchased and produced rock was $61 per tonne in 2015, compared to $63 per tonne in the same period of 2014. The percentage of phosphate rock purchased from our Miski Mayo Mine included in cost of goods sold in our North American operations was 7% for 2015 and 2014.

The Phosphates segment's production of crop nutrient dry concentrates and animal feed ingredients was 9.5 million tonnes for the year ended December 31, 2015, compared to 9.3 million tonnes for the same period of 2014. The increase in production was primarily due to a full year of production in 2015 from the Plant City facility acquired in March 2014, as part of the CF Phosphate Assets Acquisition. Our operating rate for processed phosphate production was 81% in 2015 compared to 82% in 2014.

Our phosphate rock production was 14.5 million tonnes in 2015 compared with 14.0 million tonnes in the same period of 2014. In 2015, we had a full year of production from the South Pasture, Florida mine that was acquired as part of the CF Phosphate Assets Acquisition, which resulted in an additional 0.7 million tonnes. We also had higher phosphate rock production at our legacy mines, which offset the loss of production from our Hookers Prairie, Florida mine. That mine exhausted its reserves in June 2014.

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Potash Net Sales and Gross Margin

The following table summarizes Potash net sales, gross margin, sales volumes and certain other information:

	Years Ended December 31,			2016-2015		2015-2014	
(in millions, except price per tonne or unit)	2016	2015	2014	Change	Percent	Change	Percent
Net sales:							
North America	$1,024.3	$1,337.9	$1,778.9	$(313.6)	(23.4)%	$(441.0)	(24.8)%
International	661.4	1,109.1	1,072.7	(447.7)	(40.4)%	36.4	3.4 %
Total	1,685.7	2,447.0	2,851.6	(761.3)	(31.1)%	(404.6)	(14.2)%
Cost of goods sold	1,429.1	1,658.7	1,928.4	(229.6)	(13.8)%	(269.7)	(14.0)%
Gross margin	256.6	788.3	923.2	(531.7)	(67.4)%	(134.9)	(14.6)%
Gross margin as a percentage of net sales	15.2 %	32.2 %	32.4 %				
Canadian resource taxes (CRT)	101.1	248.0	168.4	(146.9)	(59.2)%	79.6	47.3 %
Gross margin (excluding CRT)[(a)]	$357.7	$1,036.3	$1,091.6	$(678.6)	(65.5)%	$(55.3)	(5.1)%
Gross margin (excluding CRT) as a percentage of net sales[(a)]	21.2 %	42.3 %	38.3 %				
Sales volume (in thousands of metric tonnes)							
Crop Nutrients:							
North America	3,231	2,431	3,601	800	32.9 %	(1,170)	(32.5)%
International[(b)]	3,993	4,824	4,639	(831)	(17.2)%	185	4.0 %
Total	7,224	7,255	8,240	(31)	(0.4)%	(985)	(12.0)%
Non-agricultural	554	671	732	(117)	(17.4)%	(61)	(8.3)%
Total Potash Segment Tonnes	7,778	7,926	8,972	(148)	(1.9)%	(1,046)	(11.7)%
Average selling price per tonne (FOB plant):							
MOP - North America[(c)]	$174	$313	$325	$(139)	(44.4)%	$(12)	(3.7)%
MOP - International	158	239	226	(81)	(33.9)%	13	5.8 %
MOP - Average[(d)]	176	273	279	(97)	(35.5)%	(6)	(2.2)%
Production volume (in thousands of metric tonnes)	7,596	8,410	8,165	(814)	(9.7)%	245	3.0 %

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(a) Gross margin (excluding CRT), a non-GAAP measure, is calculated as GAAP gross margin less Canadian resource taxes ("CRT"). Gross margin (excluding CRT) as a percentage of net sales is calculated as GAAP gross margin less CRT, divided by net sales. Gross margin (excluding CRT) and gross margin (excluding CRT) as a percentage of net sales provide measures that we believe enhance the reader's ability to compare our GAAP gross margin with that of other companies that incur CRT expense and classify it in a manner differently than we do in their statements of earnings. Because securities analysts, investors, lenders and others use gross margin, our management believes that our presentation of gross margin (excluding CRT) and gross margin (excluding CRT) as a percentage of sales for our Potash segment affords them greater transparency in assessing our financial performance against competitors' gross margin (excluding CRT). A reconciliation of the GAAP and non-GAAP measures is found on page F-18.

(b) Includes sales volumes to our International Distribution segment.

(c) This price excludes industrial and feed selling prices which are typically at a lag due to the nature of the contracts.

(d) This price includes industrial and feed sales.

Year Ended December 31, 2016 compared to Year Ended December 31, 2015

The Potash segment’s net sales decreased to $1.7 billion for the year ended December 31, 2016, compared to $2.4 billion in the same period a year ago. The decrease was primarily due to significantly lower average selling prices that resulted in a decrease in net sales of approximately $810 million. Although overall sales volumes were down in 2016 compared to the

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2015, the current year sales mix resulted in a favorable impact on net sales of approximately $50 million, as we had an increase in our North America sales where prices were higher than international prices.

Our average MOP selling price was $176 per tonne for the year ended December 31, 2016, a decrease of $97 per tonne compared with the same period a year ago due to the factors discussed in the Overview.

The Potash segment’s sales volumes decreased to 7.8 million tonnes for the year ended December 31, 2016, compared to 7.9 million tonnes in the same period a year ago driven by a decrease in International sales volumes, due to delays in settlement of the China and India contracts in 2016. This was partially offset by an increase in North American sales due to high channel inventories in 2015 and strong fall application season and the anticipation of price increases in the latter part of 2016.

Gross margin for the Potash segment decreased to $256.6 million in the current year, from $788.3 million in the prior year period. Gross margin was negatively impacted by approximately $810 million related to lower selling prices, partially offset by approximately $50 million due to sales mix as we had higher volumes in North America compared to the prior year. Gross margin was also favorably impacted by approximately $70 million due to the benefit of a weaker Canadian dollar and our cost-saving initiatives partially offset by the unfavorable impact of higher fixed costs absorption compared to the prior year. These and other factors affecting gross margin and costs are further discussed below. As a result of all of these factors, gross margin as a percentage of net sales decreased to 15.2% for the year ended December 31, 2016, compared to 32.2% for the same period a year ago.

We incurred $153.4 million in expenses, including depreciation on brine assets, at our Esterhazy mine and $12.0 million in capital expenditures related to managing the brine inflows at our Esterhazy mine in 2016, compared to $165.7 million and $35.1 million, respectively, in 2015. We have been effectively managing the brine inflows at Esterhazy since 1985, and from time to time we experience changes to the amounts and patterns of brine inflows. Inflows continue to be within the range of our historical experience. Brine inflow expenditures continue to reflect the cost of addressing changing inflow patterns, including inflows from below our mine workings, which can be more complex and costly to manage, as well as costs associated with horizontal drilling.

The Esterhazy mine has significant brine storage capacity. Depending on inflow rates, pumping and disposal rates, and other variables, the volume of brine stored in the mine may change significantly from period to period. In general, the higher the level of brine stored in the mine, the less time available to mitigate new or increased inflows that exceed our capacity for pumping or disposal of brine outside the mine, and therefore the less time to avoid flooding and/or loss of the mine. Our past investments in remote injection and increased pumping capacities facilitate our management of the brine inflows and the amount of brine stored in the mine.

We incurred $101.1 million in Canadian resource taxes for the year ended December 31, 2016, compared with $248.0 million in the same period of the prior year. These taxes decreased due to lower realized prices and profitability in the current year. Also in the prior year, changes in Saskatchewan resource tax law resulted in higher taxes as discussed below. Royalty expense decreased to $20.5 million for the current year, compared to $33.3 million for the prior year due to lower selling prices and lower production in 2016.

For the year ended December 31, 2016, potash production was 7.6 million tonnes compared to 8.4 million tonnes in the prior year period. Our operating rate for potash production was 72% for 2016 compared to 80% for 2015, as we took steps to scale our operations and idled our Colonsay, Saskatchewan potash mine for the second half of 2016 in light of reduced customer demand. This enabled us to better manage our inventory levels and control costs.

Year Ended December 31, 2015 compared to Year Ended December 31, 2014

The Potash segment’s net sales decreased to $2.4 billion for the year ended December 31, 2015, compared to $2.9 billion in for the year ended 2014. The decrease was primarily due to lower sales volumes that resulted in a decrease in net sales of approximately $440 million partially offset by a favorable impact of approximately $40 million from selling prices. Although average selling prices were down in 2015 compared to 2014, prices had a favorable impact on net sales driven by the mix of sales as international average selling prices were higher in 2015.

Our average MOP selling price was $273 per tonne for the year ended December 31, 2015, a decrease of $6 per tonne compared with the same period of 2014. After declining in the first quarter of 2014, potash prices rebounded and continued to rise throughout 2014, led by increasing demand in Brazil, China and India. Potash prices started trending down in 2015 due to lower commodity prices, global economic conditions and foreign exchange volatility, especially in Brazil. In addition, higher supply as a result one of our competitors completing a proving run in late 2015, and higher supply of imports at lower

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prices due to lower costs for foreign producers as a result of favorable foreign exchange rates in certain countries, resulted in additional pricing pressure.

The Potash segment’s sales volumes decreased to 7.9 million tonnes for the year ended December 31, 2015, compared to 9.0 million tonnes in 2014, due to the factors discussed in the Overview.

Potash gross margin decreased to $788.3 million in 2015, from $923.2 million for the year ended December 31, 2014. Gross margin was negatively impacted by approximately $195 million from the decrease in sales volumes, partially offset by a favorable impact of approximately $40 million from our average selling prices. Lower production costs also had a positive impact of approximately $100 million on gross margin, including the benefits from a weaker Canadian dollar, higher production, which resulted in higher fixed cost absorption, and cost-saving initiatives. The average value of the Canadian dollar decreased by approximately 14% in 2015 compared to 2014, which reduced our expenses. These and other factors affecting gross margin are further discussed below. As a result of these factors, gross margin as a percentage of net sales was 32% for the years ended December 31, 2015, and 2014.

We incurred $165.7 million in expenses, including depreciation on brine assets, and $35.1 million in capital expenditures related to managing the brine inflows at our Esterhazy mine in 2015, compared to $181.6 million and $19.7 million, respectively, in 2014.

We incurred $248.0 million in Canadian resource taxes for the year ended December 31, 2015, compared with $168.4 million in 2014. These taxes increased due to lower deductions for capital expenditures primarily related to changes in Saskatchewan resource tax law in 2015. We incurred $33.3 million in royalties in the year ended December 31, 2015, compared to $26.6 million in the year ended December 31, 2014 due to higher production.

For the year ended December 31, 2015, potash production was 8.4 million tonnes compared to 8.2 million tonnes in the year ended December 31, 2014. In the first half of 2015, our operating rate for potash production was 92% as we increased production to rebuild inventory levels which were low from strong sales at the end of 2014, compared to an operating rate of 73% in the first half of 2014. In the second half of 2015, our operating rate was 69%, compared to an operating rate of 79% in the second half of 2014 when we were completing a proving run at our Colonsay, Saskatchewan mine.

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International Distribution Net Sales and Gross Margin

The following table summarizes International Distribution net sales, gross margin, sales volumes and certain other information:

	Years Ended December 31,			2016-2015		2015-2014	
(in millions, except price per tonne or unit)	2016	2015	2014	Change	Percent	Change	Percent
Net Sales	$2,533.5	$2,505.5	$2,134.5	$28.0	1.1 %	$371.0	17.4 %
Cost of goods sold	2,387.3	2,357.7	1,987.3	29.6	1.3 %	370.4	18.6 %
Gross margin	$146.2	$147.8	$147.2	$(1.6)	(1.1)%	$0.6	0.4 %
Gross margin as a percent of net sales	5.8 %	5.9 %	6.9 %				
Gross Margin per sales tonne	$21	$25	$32	$(4)	(16.0)%	$(7)	(21.9)%
Sales volume (in thousands of metric tonnes)	6,802	5,978	4,567	824	13.8 %	1,411	30.9 %
Realized prices ($/tonne)							
Average selling price (FOB destination)(a)	$369	$416	$460	$(47)	(11.3)%	$(44)	(9.6)%
Purchases ('000 tonnes)							
DAP/MAP from Mosaic	1,287	987	928	300	30.4 %	59	6.4 %
MicroEssentials® from Mosaic	880	490	453	390	79.6 %	37	8.2 %
Potash from Mosaic/Canpotex	2,020	2,039	1,348	(19)	(0.9)%	691	51.3 %

(a) Average price of all products sold by International Distribution.

Year Ended December 31, 2016 compared to Year Ended December 31, 2015

The International Distribution segment’s net sales were $2.5 billion for the years ended December 31, 2016 and 2015. In 2016, higher sales volumes favorably impacted net sales by approximately $340 million compared to the prior year period. This was partially offset by a decrease in average selling price, which negatively impacted net sales by approximately $315 million compared to the prior year.

The overall average selling price decreased $47 per tonne to $369 per tonne for 2016, primarily due to declines in global crop nutrient prices.

The International Distribution segment’s sales volume increased to 6.8 million tonnes for the year ended December 31, 2016, compared to 6.0 million tonnes for the same period a year ago, as a result of strong overall demand in Brazil. This increased demand was a result of more available customer credit and our focused efforts to grow premium product sales, particularly MicroEssentials® sales.

Our total gross margin was $146.2 million for the year ended December 31, 2016, compared with $147.8 million for the prior year. Lower prices were partially offset by the lower cost of materials included in crop nutrient blends ("Blends") due to overall decline in market prices. Gross margin per tonne decreased to $21 per tonne for the year ended December 31, 2016 from $25 per tonne for the prior year, primarily due to unfavorable inventory positions as a result of competitive pricing pressure during the first six months of 2016.

Year Ended December 31, 2015 compared to Year Ended December 31, 2014

The International Distribution segment’s net sales increased to $2.5 billion for the year ended December 31, 2015, compared to $2.1 billion for 2014. The increase in net sales was primarily due to higher sales volumes that resulted in a favorable impact of approximately $650 million, partially offset by the negative impact from lower selling prices of approximately $280 million compared to 2014.

The International Distribution segment’s sales volume increased to 6.0 million tonnes for the year ended December 31, 2015, compared to 4.6 million tonnes for the same period of 2014, driven primarily by additional tonnes from the December 2014 ADM Acquisition in Brazil. The overall average selling price decreased $44 per tonne to $416 per tonne in the year ended December 31, 2015 primarily due to a decline in the Brazilian price of materials included in Blends, and increased demand for lower value products.

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Total gross margin of $147.8 million for the year ended December 31, 2015, remained flat compared to 2014 due to lower selling prices. The lower prices were offset by the lower cost of materials included in Blends and margins from increased sales volumes as discussed above. Gross margin per tonne decreased to $25 per tonne for the year ended December 31, 2015 from $32 per tonne for 2014, primarily due to lower margins in Brazil. The margins in Brazil in the current year were unfavorably impacted by lower prices driven by weaker demand as a result of lack of access to credit, lower commodity prices and volatility in the Brazilian Real.

Corporate, Eliminations and Other

In addition to our three operating segments, we assign certain costs to Corporate, Eliminations and Other, which is presented separately in Note 25 to our Notes to Consolidated Financial Statements. Corporate, Eliminations and Other includes intersegment eliminations, including profit on intersegment sales, unrealized mark-to-market gains and losses on derivatives, debt expenses, our Streamsong Resort® and our legacy Argentina and Chile results.

Gross margin for Corporate, Eliminations and Other was $57.4 million for the year ended December 31, 2016, compared to a loss of $55.3 million in the same period a year ago. The change was driven by unrealized mark-to-market gains of $70 million in 2016, primarily on foreign currency derivatives, compared with losses of $32 million in 2015. Higher profit on intersegment sales of approximately $15 million in the current year period also contributed to the difference.

Gross margin for Corporate, Eliminations and Other was a loss of $55.3 million for the year ended December 31, 2015, compared to a loss of $80.9 million in 2014. The change was driven by a lower elimination of profit on intersegment sales of approximately $30 million. Both periods included net unrealized losses of approximately $32 million, primarily on foreign currency derivatives.

Other Income Statement Items

	Years Ended December 31,			2016-2015		2015-2014	
(in millions)	2016	2015	2014	Change	Percent	Change	Percent
Selling, general and administrative expenses	$304.2	$361.2	$382.4	$(57.0)	(16)%	$(21.2)	(6)%
Gain on assets sold and to be sold	—	—	(16.4)	—	—%	16.4	NM
Carlsbad restructuring expense	—	—	125.4	—	—%	(125.4)	NM
Other operating expenses	186.8	77.9	123.4	108.9	140%	(45.5)	(37)%
Loss in value of share repurchase agreement	—	—	(60.2)	—	—%	60.2	NM
Interest (expense)	(140.6)	(133.6)	(128.9)	(7.0)	5%	(4.7)	4%
Interest income	28.2	35.8	21.3	(7.6)	(21)%	14.5	68%
Interest expense, net	(112.4)	(97.8)	(107.6)	(14.6)	15%	9.8	(9)%
Foreign currency transaction gain (loss)	40.1	(60.5)	79.1	100.6	(166)%	(139.6)	(176)%
Other expense	(4.3)	(17.2)	(5.8)	12.9	(75)%	(11.4)	197%
(Benefit from) provision for income taxes	(74.2)	99.1	184.7	(173.3)	(175)%	(85.6)	(46)%
Equity in net earnings (loss) of nonconsolidated companies	(15.4)	(2.4)	(2.2)	(13.0)	NM	(0.2)	9%

Selling, General and Administrative Expenses

Over the past three years, our selling, general and administrative expenses have decreased, despite the CF Phosphate Assets Acquisition and ADM Acquisition, in part as a result of successful initiatives to reduce support function costs. Selling, general and administrative expenses were $304.2 million for the year ended December 31, 2016 compared to $361.2 million for the same period a year ago. The additional benefit of cost reduction initiatives in 2016 was approximately $30 million more than 2015. Lower incentive compensation for the year ended December 31, 2016, of approximately $20 million compared to the same period in the prior year also contributed to lower expenses. In addition, selling, general and administrative expenses in 2015 included integration costs related to the ADM Acquisition of approximately $11 million.

Selling, general and administrative expenses were $361.2 million for the year ended December 31, 2015 compared to $382.4 million for the same period in 2014. The year ended December 31, 2014 included costs of approximately $15 million associated with an additional incentive grant, and integration costs from the CF Phosphate Assets Acquisition and costs related to the exit from our distribution businesses in Argentina and Chile for an aggregate amount of approximately $17 million.

Gain on Assets Sold and To Be Sold

The gain on assets sold and to be sold of $16.4 million for the year ended December 31, 2014 includes a gain of $13.5 million from the sale of our salt operations at our Hersey, Michigan mine, combined with a gain of $8.5 million from the sale of our distribution business in Argentina as the final sales prices of both were higher than previously estimated. This was partially offset by a loss of $5.6 million related to the closure of our Chile distribution business.

Carlsbad Restructuring Expense

The Carlsbad restructuring expense of $125.4 million for the year ended December 31, 2014 was related to our decision to permanently discontinue production of MOP at our Carlsbad, New Mexico facility. Further information regarding this action is included in Note 23 of our Notes to Consolidated Financial Statements.

Other Operating Expenses

Other operating expenses were $186.8 million for the year ended December 31, 2016 compared to $77.9 million for the prior year period. Other operating expenses typically consist of four major categories: 1) Asset Retirement Obligations ("AROs") 2) environmental and legal reserves, 3) insurance reimbursements and 4) gain/loss on fixed assets. The increase in the current year compared to the prior year is primarily due to an expense of $70 million related to our reserve for estimated costs associated with a sinkhole that formed at our New Wales phosphate production facility in Florida, which is discussed further in Note 21 to our Consolidated Financial Statements. The increase in 2016 is also attributable to a loss of $43 million related to the cancellation of construction of a barge intended to transport ammonia as further explained in Note 16 of our Notes to our Consolidated Financial Statements, and $19 million of severance costs related to organizational restructuring, partially offset by the receipt of approximately $28 million in insurance proceeds related to a warehouse roof collapse at our Carlsbad, New Mexico location in 2014.

Other operating expenses were $77.9 million for the year ended December 31, 2015 compared to $123.4 million for the prior year period. The decrease in expenses was primarily due to nonrecurring costs in 2014 of approximately $11 million related to the wind down of operations at our Hookers Prairie, Florida phosphates mine and $14 million related to the settlement of certain legal matters. In 2015 we also had a sales and use tax refund of approximately $9 million.

Loss in Value of Share Repurchase Agreement

The change in value of share repurchase agreement in 2014 was related to the remeasurement of our share repurchase obligation under the Share Repurchase Agreements to its then-present value. For the year ended December 31, 2014, we had a loss of $60.2 million.

Foreign Currency Transaction Gain (Loss)

In 2016, we recorded a foreign currency transaction gain of $40.1 million. The gain was mainly the result of the weakening of the U.S. dollar relative to the Canadian dollar on significant U.S. dollar-denominated intercompany loans and the weakening of the U.S. dollar relative to the Brazilian Real on significant U.S. dollar-denominated payables.

In 2015, we recorded a foreign currency transaction loss of $60.5 million. The loss was mainly due to the strengthening of the U.S. dollar relative to the Brazilian Real on significant U.S. dollar-denominated payables held by our Brazilian subsidiaries. During 2015, we entered into U.S. dollar-denominated intercompany debt held by our Canadian affiliates which more than offset gains on our U.S. dollar-denominated intercompany receivables and U.S. dollar cash held by our Canadian affiliates.

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We recorded a foreign currency gain of $79.1 million for the year ended December 31, 2014. The foreign currency transaction gain was primarily the result of the strengthening of the U.S. dollar relative to the Canadian dollar on significant U.S. dollar denominated intercompany receivables and cash held by certain of our Canadian subsidiaries, partially offset by the effect of the strengthening of the U.S. dollar relative to the Brazilian Real on significant U.S. dollar denominated payables held by our Brazilian subsidiaries.

Other Expense

For the year ended December 31, 2016, we had other expense of $4.3 million compared with $17.2 million for the prior year. The current year includes realized losses from investments held by the RCRA Trusts of $10 million, partially offset by the gain on sale of an equity investment of approximately $7 million. The expense for the year ended December 31, 2015 includes the write down of an equity investment of approximately $8 million.

Equity in Net Loss of Nonconsolidated Companies

For the year ended December 31, 2016, we had a loss from equity of nonconsolidated companies of $15.4 million, net of tax, compared to loss of $2.4 million, net of tax, for the prior year. The loss in the current year is due to the decision by Canpotex not to proceed with construction of a new export terminal at the Port of Prince Rupert in British Columbia, as Canpotex determined it currently has sufficient port access and terminal capacity options to meet its needs. Mosaic's share of the loss was $24 million, or $16 million net of tax.

(Benefit from) Provision for Income Taxes

	Effective Tax Rate	Provision for Income Taxes
Year Ended December 31, 2016	(30.6)%	$ (74.2)
Year Ended December 31, 2015	9.0 %	99.1
Year Ended December 31, 2014	15.2 %	184.7

For all years our income tax is impacted by the mix of earnings across jurisdictions in which we operate, by a benefit associated with depletion, and by the impact of certain entities being taxed in both their foreign jurisdiction and the US including foreign tax credits for various taxes incurred.

In the year ended December 31, 2016, tax expense specific to the period included a benefit of $54.2 million, which includes a domestic benefit of $85.8 million related to the resolution of an Advanced Pricing Agreement, which is a tax treaty-based process, partially offset by a $23.3 million expense related to distributions from certain non-U.S. subsidiaries and $8.3 million of expense primarily related to share-based excess cost. For further information, please see Note 12 to our Notes to Consolidated Financial Statements.

During 2016, our income tax rate was favorably impacted by the mix of earnings across the jurisdictions in which we operate and by a benefit associated with depletion when compared to the year ended December 31, 2015. Exclusive of the items noted above, our income tax rate for 2016 is lower compared to 2015 because our deductions are relatively fixed in dollars, while our profitability has been reduced; therefore, the deductions are a larger percentage of income.

Income tax expense for the year ended December 31, 2015 was $99.1 million, an effective tax rate of 9.0% on pre-tax income of $1.1 billion. The tax rate included a benefit of $46.6 million, which consists of the resolution of certain state tax matters that resulted in a benefit of $18.4 million, a benefit of $14.5 million primarily related to changes in estimates associated with an Advanced Pricing Agreement, which is a tax treaty-based process, a benefit of $6.2 million related to losses on the sale of our distribution business in Chile and the reduction in the tax rate for one of our equity method investments that resulted in a benefit of $7.5 million.

Income tax expense for the year ended December 31, 2014 was $184.7 million, an effective tax rate of 15.2% on pre-tax income of $1.2 billion. The tax rate was favorably impacted by $53.6 million related to losses on the sale of our distribution business in Argentina, $8.1 million related to the settlement of certain non-U.S. tax matters, and two items related to the ADM Acquisition: $47.0 million as a result of a change in the tax status of a Brazilian subsidiary and a $32.8 million valuation allowance reduction primarily related to net operating losses at a Brazilian subsidiary. The tax rate was negatively impacted by $81.0 million as a result of our decision that our earnings were not permanently re-invested in certain non-U.S.

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subsidiaries. Additionally, during 2014, we recorded $51.9 million of tax benefit related to the $125.4 million pre-tax charges resulting from the decision to permanently discontinue production of MOP at our Carlsbad, New Mexico facility.

Non-GAAP Reconciliation

	Years Ended December 31,		
	2016	2015	2014
Sales	$1,685.7	$2,447.0	$2,851.6
Gross margin	256.6	788.3	923.2
Canadian resource taxes	101.1	248.0	168.4
Gross margin, (excluding CRT)	$357.7	$1,036.3	$1,091.6
Gross margin (excluding CRT) as a percentage of net sales	21.2 %	42.3 %	38.3 %

In addition to gross margin for the Potash segment, we have presented in the Management's Analysis above, gross margin (excluding CRT), calculated as GAAP gross margin less Canadian resource taxes ("CRT"), and gross margin (excluding CRT) as a percentage of net sales, calculated as GAAP gross margin less CRT, divided by sales. Each is a non-GAAP financial measure. Generally, a non-GAAP financial measure is a supplemental numerical measure of a company's performance, financial position or cash flows that either excludes or includes amounts that are not normally excluded or included in the most directly comparable measure calculated and presented in accordance with U.S. generally accepted accounting principles ("GAAP"). Neither gross margin (excluding CRT) nor gross margin (excluding CRT) as a percentage of net sales is a measure of financial performance under GAAP. Because not all companies use identical calculations, investors should consider that Mosaic's calculation may not be comparable to other similarly titled measures presented by other companies.

Gross margin (excluding CRT) and gross margin (excluding CRT) as a percentage of net sales provide measures that we believe enhances the reader's ability to compare our gross margin with that of other peer companies that incur CRT expense and classify it in a manner differently than we do in their statement of earnings. Because securities analysts, investors, lenders and others use gross margin (excluding CRT), our management believes that our presentation of gross margin (excluding CRT) for Potash affords them greater transparency in assessing our financial performance against competitors. When measuring the performance of our Potash business, our management regularly utilizes gross margin before CRT. Neither gross margin (excluding CRT) nor gross margin (excluding CRT) as a percentage of net sales, should be considered as a substitute for, or superior to, measures of financial performance prepared in accordance with GAAP.

Critical Accounting Estimates

We prepare our Consolidated Financial Statements in conformity with accounting principles generally accepted in the United States of America which requires us to make various judgments, estimates and assumptions that could have a significant impact on our reported results and disclosures. We base these estimates on historical experience and other assumptions believed to be reasonable at the time we prepare our financial statements. Changes in these estimates could have a material effect on our Consolidated Financial Statements.

Our significant accounting policies can be found in Note 2 of our Notes to Consolidated Financial Statements. We believe the following accounting policies include a higher degree of judgment and complexity in their application and are most critical to aid in fully understanding and evaluating our reported financial condition and results of operations.

Recoverability of Long-Lived Assets including Goodwill

Assessing the potential impairment of long-lived assets, including our investments in unconsolidated subsidiaries, is an integral part of our normal ongoing review of operations. These assessments involve estimates that require significant management judgment, and include inherent uncertainties that are often interdependent and do not change in isolation. Factors that management must estimate include, among others, industry and market conditions, the economic life of the asset, sales volume and prices, inflation, raw materials costs, cost of capital, tax rates and capital spending. These factors are even more difficult to predict when global financial and commodity markets are highly volatile. Further, our Company faces many uncertainties and risks related to various economic, political and regulatory environments in the countries in which we operate. Refer to "Item 1A. Risk Factors" in Part I of our annual report on Form 10-K for 2016.

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As mentioned above, these factors do not change in isolation; therefore, it is not practicable to present the impact of changing a single factor. If management uses different assumptions or if different conditions occur in future periods, future impairment charges could result and could be material. Impairments generally would be non-cash charges. During the years ended December 31, 2016, 2015, and 2014, no material impairments were indicated for Mosaic's asset groups, other than strategic decisions where we have recorded charges as previously disclosed.

The carrying value of goodwill in our reporting units is tested annually as of October 31st for possible impairment. We typically use an income approach valuation model, representing present value of future cash flows, to determine the fair value of a reporting unit. Growth rates for sales and profits are determined using inputs from our annual strategic and long range planning process. The rates used to discount projected future cash flows reflect a weighted average cost of capital based on the Company's industry, capital structure and risk premiums including those reflected in the current market capitalization. When preparing these estimates, management considers each reporting unit's historical results, current operating trends, and specific plans in place. These estimates are impacted by various factors including inflation, the general health of the economy and market competition. In addition, events and circumstances that might be indicators of possible impairment are assessed during other interim periods. Due to market conditions over recent years, we have experienced a significant decline in our market capitalization. As of October 31, 2016, the date of the annual impairment testing, the Company concluded that the fair values of all reporting units were in excess of their respective carrying values and the goodwill for those units was not impaired. While no impairment indicators were identified, due to the reduction of fair value in excess of carrying value there is risk for future impairment if projected operating results are not met or other inputs into the fair value measurement diminish. See Note 9 of our Notes to Consolidated Financial Statements for additional information regarding the goodwill impairment analysis. As of December 31, 2016, we had $1.6 billion of goodwill.

Useful Lives of Depreciable Assets, Methods of Depreciation, and Rates of Depletion

We estimate initial useful lives of property, plant and equipment, and/or methods of depreciation, based on operational experience, current technology, improvements made to the assets, and anticipated business plans. Factors affecting the fair value of our assets, as noted above, may also affect the estimated useful lives of our assets and these factors can change. Therefore, we periodically review the estimated remaining useful lives of our facilities and other significant assets and adjust our depreciation rates prospectively where appropriate. As indicated in Note 2 of our Notes to Consolidated Financial Statements we are in the process of changing to the units-of-production method of depreciation for certain assets and expect to complete our assessment and discuss the impacts in the first quarter of 2017.

Depletion expenses for mining operations, including mineral reserves, are generally determined using the units-of-production method based on estimates of recoverable reserves. These estimates may change based on new information regarding the extent or quality of mineral reserves, permitting or changes in mining strategies.

Inventories

We review our inventory carrying amounts quarterly to determine if they exceed their estimated net realizable value. Forecasted selling prices are a significant component in determining estimated net realizable value. As described in our significant accounting policies, there are a number of demand and supply variables that can impact forecasted selling prices. Additionally, judgment is involved in this analysis with estimating whether inventories will be sold as blends or other products and the expected effects on costs. These factors do not change in isolation, and therefore, it is not practicable to present the impact of changing a single factor.

Although we believe our judgments and estimates are reasonable, results could differ materially if actual selling prices differ significantly from forecasted selling prices or if expected costs change significantly through the ultimate sale of inventory. Charges for lower of cost or market adjustments, if any, are recognized in our Consolidated Statements of Earnings in the period when there is evidence of a decline of market value below cost. During the years ended December 31, 2016, 2015, and 2014 no material lower of cost or net realizable value inventory write-downs were indicated.

We allocate fixed expenses to the costs of production based on normal capacity, which refers to a range of production levels and is considered the production expected to be achieved over a number of periods or seasons under normal circumstances, taking into account the loss of capacity resulting from planned maintenance. Fixed overhead costs allocated to each unit of production should not increase due to abnormally low production. Those excess costs are recognized as a current period expense. When a production facility is completely shut down temporarily, it is considered "idle", and all related expenses are charged to cost of goods sold.

Environmental Liabilities and Asset Retirement Obligations

We record accrued liabilities for various environmental and reclamation matters including the demolition of former operating facilities, and AROs.

Contingent environmental liabilities are described in Note 21 of our Notes to Consolidated Financial Statements. Accruals for environmental matters are based primarily on third-party estimates for the cost of remediation at previously operated sites and estimates of legal costs for ongoing environmental litigation. We regularly assess the likelihood of material adverse judgments or outcomes, the effects of potential indemnification, as well as potential ranges or probability of losses. We determine the amount of accruals required, if any, for contingencies after carefully analyzing each individual matter. Estimating the ultimate settlement of environmental matters requires us to make complex and interrelated assumptions based on experience with similar matters, our history, precedents, evidence, and facts specific to each matter. Actual costs incurred in future periods may vary from the estimates, given the inherent uncertainties in evaluating environmental exposures. As of December 31, 2016 and 2015, we had accrued $79.6 million and $25.6 million, respectively, for environmental matters.

As indicated in Note 13 of our Notes to Consolidated Financial Statements, we recognize AROs in the period in which we have an existing legal obligation, and the amount of the liability can be reasonably estimated. We utilize internal engineering experts as well as third-party consultants to assist management in determining the costs of retiring certain of our long-term operating assets. Assumptions and estimates reflect our historical experience and our best judgments regarding future expenditures. The assumed costs are inflated based on an estimated inflation factor and discounted based on a credit-adjusted risk-free rate. For active facilities, fluctuations in the estimated costs (including those resulting from a change in environmental regulations), inflation rates and discount rates can have a significant impact on the corresponding assets and liabilities recorded in the Consolidated Balance Sheets. However, changes in the assumptions for our active facilities would not have a significant impact on the Consolidated Statements of Earnings in the year they are identified. For closed facilities, fluctuations in the estimated costs, inflation and discount rates have an impact on the Consolidated Statements of Earnings in the year they are identified as there is no asset related to these items. Phosphate land reclamation activities generally occur concurrently with mining operations; as such, we accrue and expense reclamation costs as we mine. As of December 31, 2016 and 2015, $849.9 million and $841.6 million, respectively, was accrued for AROs (current and noncurrent amounts). In August 2016, Mosaic deposited $630 million into two trust funds as financial assurance to support certain estimated future asset retirement obligations. See Note 13 of our Notes to Consolidated Financial Statements for additional information regarding the EPA RCRA Initiative.

Pension Plans and Other Postretirement Benefits

The accounting for benefit plans is highly dependent on valuation of pension assets and actuarial estimates and assumptions.

The assumptions and actuarial estimates required to estimate the employee benefit obligations for pension plans and other postretirement benefits include discount rate, expected salary increases, certain employee-related factors, such as turnover, retirement age and mortality (life expectancy), expected return on assets and healthcare cost trend rates. We evaluate these critical assumptions at least annually. Our assumptions reflect our historical experiences and our best judgments regarding future expectations that have been deemed reasonable by management.

The judgments made in determining the costs of our benefit plans can impact our Consolidated Statements of Earnings. As a result, we use actuarial consultants to assist management in developing reasonable assumptions and cost estimates. Actual results in any given year will often differ from actuarial assumptions because of economic and other factors. The effects of actual results differing from our assumptions are included as a component of other comprehensive income/(expense) as unamortized net gains and losses, which are amortized into earnings over future periods. As of December 31, 2016 and 2015, we had $70.1 million and $75.7 million, respectively, accrued for pension and other postretirement benefit obligations. Our pension and other postretirement benefits are further described in Note 17 of our Notes to Consolidated Financial Statements.

Income Taxes

We make estimates for income taxes in three major areas: uncertain tax positions, valuation allowances, and U.S. deferred income taxes on our non-U.S. subsidiaries' undistributed earnings.

Due to Mosaic's global operations, we assess uncertainties and judgments in the application of complex tax regulations in a multitude of jurisdictions. Future changes in judgment related to the expected ultimate resolution of uncertain tax positions

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will affect earnings in the quarter of such change. While it is often difficult to predict the final outcome or the timing of resolution of any particular uncertain tax position, our liabilities for income taxes reflect what we believe to be the more likely than not outcome. We adjust these liabilities, as well as the related interest, in light of changing facts and circumstances including negotiations with taxing authorities in various jurisdictions, outcomes of tax litigation, and resolution of disputes arising from tax audits in the normal course of business. Settlement of any particular position may require the use of cash. Based upon an analysis of tax positions taken on prior year returns and expected positions to be taken on the current year return, management has identified gross uncertain income tax positions of $27.1 million as of December 31, 2016.

A valuation allowance is provided for deferred tax assets for which it is more likely than not that the related tax benefits will not be realized. Significant judgment is required in evaluating the need for and magnitude of appropriate valuation allowances. The realization of the Company’s deferred tax assets is dependent on generating certain types of future taxable income, using both historical and projected future operating results, the source of future income, the reversal of existing taxable temporary differences, taxable income in prior carry-back years (if permitted) and the availability of tax planning strategies. As of December 31, 2016 and 2015, we had a valuation allowance of $30.6 million and $11.9 million, respectively. Changes in tax laws, assumptions with respect to future taxable income, tax planning strategies, resolution of matters under tax audit and foreign currency exchange rates could result in adjustment to these allowances.

We have not recorded U.S. deferred income taxes on certain of our non-U.S. subsidiaries’ undistributed earnings as such amounts are intended to be reinvested outside the United States indefinitely. Generally, such amounts become subject to U.S. taxation upon the remittance of dividends and under certain other circumstances. It is not practicable to estimate the amount of additional U.S. tax liabilities we would incur.

We have included a further discussion of income taxes in Note 12 of our Notes to Consolidated Financial Statements.

Litigation

Our operating results are affected by claims and judicial or administrative proceedings involving the Company, many of which are incidental to the ordinary operation of the business, as described in Note 21 of our Notes to Consolidated Financial Statements. We record accruals for such claims and proceedings when information available to us indicates it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. These accruals are established as part of an ongoing assessment that takes into consideration such items as advice of legal counsel, developments in individual claims and proceedings, changes in the law, changes in business focus, changes in the litigation environment, changes in opponent strategy and tactics, ongoing discovery, and our experience in defending and settling similar claims. Adjustments to accruals, recorded as needed in our Consolidated Statement of Earnings each quarter, are made to reflect changes in and current status of these factors. While we have established what we currently believe are adequate accruals for pending legal matters, these accruals frequently involve estimates based upon the current judgment of management and others and the final outcome or potential settlement of litigation or other claims could differ materially from the recorded amounts.

Liquidity and Capital Resources

We define liquidity as the ability to generate or access adequate amounts of cash to meet current cash needs. We assess our liquidity in terms of our ability to fund working capital requirements, fund sustaining and opportunity capital projects, pursue strategic opportunities and capital management decisions which include making payments on and issuing indebtedness and making distributions to our shareholders, either in the form of share repurchases or dividends. Our liquidity, to a certain extent, is subject to general economic, financial, competitive and other factors that are beyond our control.

As of December 31, 2016, we had cash and cash equivalents of $0.7 billion, plus marketable securities held in trust to fund future obligations of $0.6 billion, stockholders’ equity of $9.6 billion, long-term debt, including current maturities of $3.8 billion and short-term debt of $0.1 million. We have a target liquidity buffer of $2.5 billion, including cash and available committed credit lines. We also target debt leverage ratios that are consistent with investment grade credit ratings. Our capital allocation priorities include maintaining our investment grade rating and financial strength, sustaining our assets, including ensuring the safety and reliability of our assets, investing to grow our business either through organic growth or taking advantage of strategic opportunities and returning excess cash to shareholders, including paying our dividend. During 2016, we invested $0.8 billion in capital expenditures and $220 million in MWSPC, and returned cash to shareholders through share repurchases of $75 million (through the ASR as discussed in Note 18 of our Notes to Consolidated Financial Statements) and cash dividends of $385.1 million.

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All of our cash and cash equivalents are diversified in highly rated investment vehicles. Our cash and cash equivalents are held either in the U.S. or held by non-U.S. subsidiaries and are not subject to significant foreign currency exposures, as the majority are held in investments denominated in U.S. dollars as of December 31, 2016. These funds may create foreign currency transaction gains or losses depending on the functional currency of the entity holding the cash. In addition, there are no significant restrictions that would preclude us from bringing these funds back to the U.S.; however, there would be an income tax expense impact on repatriating approximately $270 million of cash associated with certain undistributed earnings, which are part of the permanently reinvested earnings discussed in Note 12 of our Notes to Consolidated Financial Statements. We intend to use this cash for non-U.S. expansions and other investments outside the U.S.

Cash Requirements

The cash portion of the purchase price we have agreed to pay to acquire Vale S.A.'s global phosphates and potash operations conducted through Vale Fertilizantes S.A. is $1.25 billion, subject to adjustments based on matters such as the working capital and indebtedness balances of Vale Fertilizantes at the time of the closing. We expect to fund this amount primarily through the issuance of debt.

We have certain additional contractual cash obligations that require us to make payments on a scheduled basis. These include, among other things, long-term debt payments, interest payments, operating leases, unconditional purchase obligations, and funding requirements of pension and postretirement obligations. Unconditional purchase obligations are our largest contractual cash obligations. These include obligations for capital expenditures related to our expansion projects, contracts to purchase raw materials such as sulfur, ammonia, phosphate rock and natural gas, obligations to purchase raw materials for our international distribution activities and equity contributions for or loans to nonconsolidated investments, including MWSPC. Other large cash obligations are our AROs and other environmental obligations primarily related to our Phosphates segment, and our long-term debt. Our long-term debt has maturities ranging from one year to 27 years. We expect to fund our AROs, purchase obligations, and capital expenditures with a combination of operating cash flows, cash and cash equivalents, and borrowings. See Off-Balance Sheet Arrangements and Obligations below for the amounts owed by Mosaic under Contractual Cash Obligations and for more information on other environmental obligations, and the discussion of MWSPC in Note 8 of our Notes to Consolidated Financial Statements for more information on this matter.

Sources and Uses of Cash

The following table represents a comparison of the net cash provided by operating activities, net cash used in investing activities, and net cash provided by (used in) financing activities for calendar years 2016, 2015, and 2014:

(in millions)	Years Ended December 31,			2016-2015		2015-2014	
Cash Flow	2016	2015	2014	Change	Percent	Change	Percent
Net cash provided by operating activities	$1,266.1	$1,807.6	$2,122.1	$(541.5)	(30)%	$(314.5)	(15)%
Net cash used in investing activities	(1,049.5)	(1,748.4)	(2,739.1)	698.9	(40)%	990.7	(36)%
Net cash provided by (used in) financing activities	(888.6)	(893.4)	(2,168.4)	4.8	(1)%	1,275.0	(59)%

As of December 31, 2016, we had cash and cash equivalents of $0.7 billion. Funds generated by operating activities, available cash and cash equivalents, and our revolving credit facility continue to be our most significant sources of liquidity. We believe funds generated from the expected results of operations and available cash, cash equivalents and borrowings either under our revolving credit facility or through long-term borrowings will be sufficient to finance our operations, including our expansion plans, existing strategic initiatives, and expected dividend payments for the next 12 months. There can be no assurance, however, that we will continue to generate cash flows at or above current levels. At December 31, 2016, we had $1.98 billion available under our $2.0 billion revolving credit facility.

Operating Activities

Net cash flow from operating activities has provided us with a significant source of liquidity. For the year ended December 31, 2016, net cash provided by operating activities was $1.3 billion, compared to $1.8 billion in the same period of the prior

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year. Our results of operations, after non-cash adjustments to net earnings, contributed $1.0 billion to cash flows from operating activities during 2016 compared to $2.0 billion during 2015. During 2016, we had a favorable working capital change of $314.2 million compared to an unfavorable change of $163.9 million during 2015.

The change in assets and liabilities for the year ended December 31, 2016 was primarily driven by favorable impacts from the changes in inventories of $263.0 million and other current and noncurrent assets of $245.7 million, partially offset by an unfavorable impact from the change in accounts payable and accrued liabilities of $243.9 million. The change in inventories was primarily related to the lower cost of raw material and inventory purchases in the current year. The change in other current and noncurrent assets was driven by a decrease in the balance of final price deferred product and a decrease in income tax receivable. The balance of our final price deferred product decreased during 2016 as rising prices late in the year caused customers to price product at the end of 2016. Income taxes receivable decreased due to the receipt of a refund for income taxes in 2016. The unfavorable impact in accounts payable was primarily due to our International Distribution business and the timing of payments.

The change in working capital for the year ended December 31, 2015 was primarily driven by an unfavorable impact from the change in other current and noncurrent assets of $313.3 million, mostly offset by a favorable impact from the change in accounts payable of $301.8 million. The change in other current and noncurrent assets was driven by an increase in the balance of final price deferred product and an increase in income tax receivable. The balance of our final price deferred product increased during 2015 from a low level in December 2014 as rising prices caused customers to price product at the end of 2014. Income taxes receivable increased due to the overpayment of estimated payments in 2015. The favorable impact in accounts payable was primarily due to our International Distribution business and the timing of payments as we have extended terms in Brazil.

For the year ended December 31, 2014, cash flows from operating activities were favorably impacted by the change in working capital. This was driven by a decrease in other current assets and noncurrent assets and an increase in accounts payable, partially offset by increases in accounts receivable and inventories. Other current and noncurrent assets decreased by $457.7 million driven by a decrease in our income tax receivable due to the application of prior year tax refunds against current year tax liabilities, resulting in paying less cash for taxes. It was also driven by a decline in the balance of final price deferred products as many of these priced in December 2014, and a decrease in working capital levels of Argentina and Chile. Accounts payable increased by $105.6 million primarily due to the timing of payments for inventory purchases in Brazil that had not been paid for at December 31, 2014. Accounts receivable increased by $226.5 million primarily due to higher sales in December 2014 compared to December 2013. Inventories increased by $129.7 million due to the higher cost of raw materials used in our phosphates products in 2014.

Investing Activities

Net cash used in investing activities for the year ended December 31, 2016 was $1.0 billion, compared to $1.7 billion in the same period a year ago. Included in net cash used in investing activities in the current year period is an investment of $220.0 million in MWSPC compared to $225.2 million during 2015. In addition, we invested $169.0 million in an affiliate in the current year, for the construction of vessels intended to transport anhydrous ammonia, primarily for Mosaic's operations, as discussed in Note 16 of our Notes to Consolidated Financial Statements in this report. In the current year period, we had capital expenditures of $843.1 million, compared to $1.0 billion in the prior year period. Also, in 2016, approximately $200 million, previously held in the Plant City Trust, was released to us after we arranged for substitute financial assurance through delivery of a surety bond by insurance companies as discussed in Note 13 of our Notes to Consolidated Financial Statements.

Net cash used in investing activities for the year ended December 31, 2015 was $1.7 billion, compared to $2.7 billion in the same period a year ago. Included in net cash used in investing activities in 2015 was $630 million, which had been classified as restricted cash included in other assets in our Consolidated Balance Sheet. This cash was placed into trust funds in August 2016, as financial assurance to support certain estimated future AROs, as discussed in Note 13 of our Notes to Consolidated Financial Statements. In 2015, we had higher capital expenditures of $1.0 billion compared with $0.9 billion in the prior year period, due to higher opportunity capital project spending. Also, in 2015, we received $47.9 million related to a working capital adjustment from our ADM Acquisition and invested $225.2 million in MWSPC.

Net cash used in investing activities for the year ended December 31, 2014, was $2.7 billion. In 2014, we completed the CF Phosphate Assets Acquisition and the ADM Acquisition for approximately $1.7 billion and invested $154.6 million in

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MWSPC. Capital expenditures decreased by $497.5 million due to lower Potash expansion spending and the timing of maintenance capital.

Financing Activities

Net cash used in financing activities was $0.9 billion for the years ended December 31, 2016 and 2015, respectively. Cash used in financing activities for 2016 reflected net payments for structured accounts payable of $358.6 million and dividends paid of $385.1 million. During the current year period, we also purchased shares of our common stock for approximately $75.0 million under our 2015 Repurchase Program.

Net cash used in financing activities for the year ended December 31, 2015 was $0.9 billion, compared to $2.2 billion for the year ended December 31, 2014. Cash used in financing activities primarily reflected shares repurchased during the year, for an aggregate of approximately $709.5 million, and dividends paid of $384.7 million. These were partially offset by net proceeds from structured accounts payable arrangements of $239.5 million in 2015.

Net cash used in financing activities for the year ended December 31, 2014 was $2.2 billion. Cash used in financing activities primarily reflected shares repurchased during the year for an aggregate of approximately $2.8 billion, and dividends paid of $382.5 million, partially offset by proceeds of $800 million from our 2014 term loan facility.

Debt Instruments, Guarantees and Related Covenants

See Note 10 of our Notes to Consolidated Financial Statements for additional information relating to our financing arrangements, which is hereby incorporated by reference.

Financial Assurance Requirements

In addition to various operational and environmental regulations primarily related to our Phosphates segment, we incur liabilities for reclamation activities under which we are subject to financial assurance requirements. In various jurisdictions in which we operate, particularly Florida and Louisiana, we are required to pass a financial strength test or provide credit support, typically in the form of cash deposits, surety bonds or letters of credit. See Other Commercial Commitments under Off-Balance Sheet Arrangements and Obligations and Note 21 of our Notes to Consolidated Financial Statements for additional information about these requirements.

Off-Balance Sheet Arrangements and Obligations

Off-Balance Sheet Arrangements

In accordance with the definition under rules of the Securities and Exchange Commission ("SEC"), the following qualify as off-balance sheet arrangements:

- certain obligations under guarantee contracts that have "any of the characteristics identified in Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") paragraph ASC 460-10-15-4 (Guarantees Topic)";
- a retained or contingent interest in assets transferred to an unconsolidated entity or similar arrangement that serves as credit, liquidity or market risk support to that entity for such assets;
- any obligation, including a contingent obligation, under a contract that would be accounted for as derivative instruments except that it is both indexed to the registrant's own stock and classified as equity; and
- any obligation, arising out of a variable interest in an unconsolidated entity that is held by, and material to, the registrant, where such entity provides financing, liquidity, market risk or credit risk support to the registrant, or engages in leasing, hedging or research and development services with the registrant.

Information regarding guarantees that meet the above requirements is included in Note 16 of our Notes to Consolidated Financial Statements and is hereby incorporated by reference. We do not have any contingent interest in assets transferred, derivative instruments, or variable interest entities that qualify as off-balance sheet arrangements under SEC rules.

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Contractual Cash Obligations

The following is a summary of our contractual cash obligations as of December 31, 2016:

		Payments by Calendar Year			
(in millions)	Total	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years
Long-term debt	$3,818.1	$38.8	$188.8	$1,049.3	$2,541.2
Estimated interest payments on long-term debt[(a)]	2,281.0	164.1	316.1	306.9	1,493.9
Operating leases	339.2	81.5	115.6	76.5	65.6
Purchase commitments[(b)]	6,367.7	2,300.3	1,019.9	635.4	2,412.1
Pension and postretirement liabilities[(c)]	463.0	44.3	90.8	92.8	235.1
Total contractual cash obligations	$13,269.0	$2,629.0	$1,731.2	$2,160.9	$6,747.9

(a) Based on interest rates and debt balances as of December 31, 2016.

(b) Based on prevailing market prices as of December 31, 2016. The majority of value of items more than 5 years is related to our estimated purchase commitments from our equity investee, the Miski Mayo Mine, and under the CF Ammonia Supply Agreement. For additional information related to our purchase commitments, see Note 20 of our Notes to Consolidated Financial Statements.

(c) The 2017 pension plan payments are based on minimum funding requirements. For years thereafter, pension plan payments are based on expected benefits paid. The postretirement plan payments are based on projected benefit payments.

In addition to the above, we have an obligation to fund our investment in MWSPC of approximately $143 million in 2017.

Other Commercial Commitments

The following is a summary of our other commercial commitments as of December 31, 2016:

		Commitment Expiration by Calendar Year			
(in millions)	Total	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years
Letters of credit	$21.0	$21.0	$ —	$ —	$ —
Surety bonds	541.1	540.8	0.3	—	—
Total	$562.1	$561.8	$ 0.3	$ —	$ —

The surety bonds and letters of credit generally expire within one year or less but a substantial portion of these instruments provide financial assurance for continuing obligations and, therefore, in most cases, must be renewed on an annual basis. We issue letters of credit through our revolving credit facility and bi-lateral agreements. As of December 31, 2016 we had $15.7 million of outstanding letters of credit through our credit facility and $5.3 million outstanding through bi-lateral agreements. We primarily incur liabilities for reclamation activities in our Florida operations and for phosphogypsum management system (“Gypstack”) closure in our Florida and Louisiana operations where, for permitting purposes, we must either pass a test of financial strength or provide credit support, typically in the form of cash deposits, surety bonds or letters of credit. As of December 31, 2016, we had $237.4 million in surety bonds outstanding for reclamation obligations, primarily related to mining in Florida, and a $259.5 million surety bond delivered to EPA in October 2016 as a substitute for the financial assurance provided through the Plant City Trust. The surety bonds generally require us to obtain a discharge of the bonds or to post additional collateral (typically in the form of cash or letters of credit) at the request of the issuer of the bonds.

We are subject to financial assurance requirements related to the closure and post-closure care of our Gypstacks in Florida and Louisiana. These requirements include Florida and Louisiana state financial assurance regulations, and financial assurance requirements under the terms of consent decrees that we have entered into with respect to our facilities in Florida and Louisiana. These include a consent decree (the “Plant City Consent Decree”) with the Environmental Protection Agency (“EPA”) and the Florida Department of Environmental Protection (“FDEP”) relating to the Plant City, Florida facility we

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acquired as part of the CF Phosphate Assets Acquisition (the “Plant City Facility”) and two separate consent decrees (collectively, the “2015 Consent Decrees”) with federal and state regulators that include financial assurance requirements for the closure and post-closure care of substantially all of our Gypstacks in Florida and Louisiana, other than those acquired as part of the CF Phosphate Assets Acquisition, which are discussed separately below.

See Note 13 of our Notes to Consolidated Financial Statements for additional information relating to our financial assurance obligations, including the Plant City Consent Decree and the 2015 Consent Decrees, which information is incorporated by reference.

Currently, state financial assurance requirements in Florida and Louisiana for the closure and post-closure care of Gypstacks are, in general terms, based upon the same assumptions and associated estimated values as the AROs recognized for financial reporting purposes. For financial reporting purposes, we recognize the AROs based on the estimated future closure and post-closure costs of Gypstacks, the undiscounted value of which is approximately $1.6 billion. The value of the AROs for closure and post-closure care of Mosaic’s Gypstacks, discounted to the present value based on a credit-adjusted risk-free rate, is reflected on our Consolidated Balance Sheets in the amount of approximately $527 million as of December 31, 2016. Compliance with the financial assurance requirements in Florida and Louisiana is generally based on the undiscounted Gypstack closure estimates.

We satisfy substantially all of our Florida, Louisiana and federal financial assurance requirements through compliance with the financial assurance requirements under the 2015 Consent Decrees, by providing third-party credit support in the form of surety bonds (including under the Plant City Consent Decree), and through a trust fund related to a closed Florida phosphate concentrates facility in Bartow, Florida (the “Bonnie Facility”) as discussed below. We comply with our remaining state financial assurance requirements because our financial strength permits us to meet applicable financial strength tests. However, at various times we have not met the applicable financial strength tests and there can be no assurance that we will be able to meet the applicable financial strength tests in the future. In the event we do not meet either financial strength test, we could be required to seek an alternate financial strength test acceptable to state regulatory authorities or provide credit support, which may include surety bonds, letters of credit and cash escrows or trust funds. Cash escrows or trust funds would be classified as restricted cash on our Consolidated Balance Sheets. Assuming we maintain our current levels of liquidity and capital resources, we do not expect that these Florida and Louisiana requirements will have a material effect on our results of operations, liquidity or capital resources.

As part of the CF Phosphate Assets Acquisition, we assumed certain ARO related to Gypstack Closure Costs at both the Plant City Facility and the Bonnie Facility that we acquired. Associated with these assets are two related financial assurance arrangements for which we became responsible and that provide sources of funds for the estimated Gypstack Closure Costs for these facilities, pursuant to federal or state law, which the government can draw against in the event we cannot perform such closure activities. One was initially a trust (the “Plant City Trust”) established to meet the requirements under a consent decree with EPA and the FDEP with respect to RCRA compliance at Plant City that also satisfied Florida financial assurance requirements at that site. The other is a trust fund (the “Bonnie Facility Trust”) established to meet the requirements under Florida financial assurance regulations (the “Florida Financial Assurance Requirement”) that apply to the Bonnie Facility. In the CF Phosphate Assets Acquisition, we deposited $189.2 million into the Plant City Trust as a substitute for funds that CF had deposited into trust. Based on our updated closure cost estimates, an additional $7 million was added to the Plant City Trust in the fourth quarter of 2014 and an additional $1.7 million was deposited in the third quarter of 2015 to correspond to that site's then estimated Gypstack Closure Costs. In addition, in July 2014, the FDEP approved our funding of $14.5 million into the Bonnie Facility Trust, which substituted funds that CF had deposited into an escrow account. We have since deposited an additional $6 million at various times into the Bonnie Facility Trust. Both financial assurance funding obligations require estimates of future expenditures that could be impacted by refinements in scope, technological developments, new information, cost inflation, changes in regulations, discount rates and the timing of activities. We are also permitted to satisfy our financial assurance obligations with respect to the Bonnie and Plant City Facilities by means of alternative credit support, including surety bonds or letters of credit. In September 2016 we arranged for the delivery of a surety bond to EPA in the face amount of approximately $260 million (the “Plant City Bond”), reflecting our updated closure cost estimates, as a substitute for the financial assurance provided through the Plant City Trust. Approximately $200 million, previously held in the Plant City Trust, became unrestricted cash. Under our current approach to satisfying applicable requirements, additional financial assurance would be required in the future if increases in cost estimates exceed the face amount of the Plant City Bond or the amount held in the Bonnie Facility Trust.

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Other Long-Term Obligations

The following is a summary of our other long-term obligations, including Gypstacks and land reclamation in our Phosphate and Potash segment, as of December 31, 2016:

		Payments by Calendar Year			
(in millions)	Total	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years
ARO[(a)]	$2,189.2	$88.4	$139.2	$89.3	$1,872.3

(a) Represents the undiscounted, inflation-adjusted estimated cash outflows required to settle the AROs. The corresponding present value of these future expenditures is $849.9 million as of December 31, 2016, and is reflected in our accrued liabilities and other noncurrent liabilities in our Consolidated Balance Sheets.

In addition to the above, in 2014, we entered into five-year fertilizer supply agreements providing for Mosaic to supply ADM's fertilizer needs in Brazil and Paraguay.

Most of our export sales of potash crop nutrients are marketed through a North American export association, Canpotex, which funds its operations in part through third-party financing facilities. As a member, Mosaic or our subsidiaries are, subject to certain conditions and exceptions, contractually obligated to reimburse Canpotex for their pro rata share of any operating expenses or other liabilities incurred. The reimbursements are made through reductions to members' cash receipts from Canpotex.

Commitments are set forth in Note 20 of our Notes to Consolidated Financial Statements and are hereby incorporated by reference.

Income Tax Obligations

Gross uncertain tax positions as of December 31, 2016 of $27.1 million are not included in the other long-term obligations table presented above because the timing of the settlement of unrecognized tax benefits cannot be reasonably determined. For further discussion, refer to Note 12 of our Notes to Consolidated Financial Statements.

Market Risk

We are exposed to the impact of fluctuations in the relative value of currencies, fluctuations in interest rates, fluctuations in the purchase prices of natural gas, ammonia and sulfur consumed in operations, and changes in freight costs, as well as changes in the market value of our financial instruments. We periodically enter into derivatives in order to mitigate our interest rate risks, foreign currency risks and the effects of changing commodity prices and freight prices, but not for speculative purposes. Unrealized mark-to-market gains and losses on derivatives are recorded in Corporate, Eliminations and Other. Once realized, they are recorded in the related business segment.

Foreign Currency Exchange Rates

We use financial instruments, including forward contracts and zero-cost collars, which typically expire within eighteen months, to reduce the impact of foreign currency exchange risk in our cash flows, not the foreign currency volatility in our earnings.

One of the primary currency exposures relates to several of our Canadian entities, whose sales are primarily denominated in U.S. dollars, but whose costs are paid principally in Canadian dollars, which is their functional currency. We generally enter into derivative instruments for a portion of the currency risk exposure on anticipated cash inflows and outflows, including contractual outflows for our Potash expansion and other capital expenditures denominated in Canadian dollars. A stronger Canadian dollar generally reduces these entities' operating earnings. A weaker Canadian dollar has the opposite effect. Depending on the underlying exposure, such derivatives can create additional earnings volatility because we do not use hedge accounting. Gains or losses on these derivative contracts, both for open contracts at quarter end (unrealized) and settled contracts (realized), are recorded in either cost of goods sold or foreign currency transaction gain (loss).

The functional currency for our Brazilian subsidiaries is the Brazilian real. We finance our Brazilian inventory purchases with U.S. dollar denominated liabilities. A stronger Brazilian real relative to the U.S. dollar has the impact of reducing these

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liabilities on a functional currency basis. When this occurs, an associated foreign currency transaction gain is recorded as non-operating income. A weaker Brazilian real has the opposite effect. We also enter into derivative instruments for a portion of our currency risk exposure on anticipated cash flows, and record an associated gain or loss in the foreign currency transaction gain (loss) line in the Consolidated Statements of Earnings.

As discussed above, we have Canadian dollar, Brazilian real, and other foreign currency exchange contracts. As of December 31, 2016 and 2015, the fair value of our major foreign currency exchange contracts were ($6.5) million and ($54.0) million, respectively. We recorded an unrealized gain of $45.7 million in cost of goods sold and recorded an unrealized gain of $3.9 million in foreign currency transaction gain (loss) in the Consolidated Statements of Earnings for 2016.

The table below provides information about Mosaic’s significant foreign exchange derivatives.

	As of December 31, 2016			As of December 31, 2015		
	Expected Maturity Date Years ending December 31,			Expected Maturity Date Years ending December 31,		
(in millions)	2017	2018	Fair Value	2016	2017	Fair Value
Foreign Currency Exchange Forwards						
Canadian Dollar			$ (4.0)			$ (48.4)
Notional (million US$) - long Canadian dollars	$361.4	$33.8		$668.1	$78.4	
Weighted Average Rate - Canadian dollar to U.S. dollar	1.3282	1.3294		1.2873	1.3388	
Foreign Currency Exchange Collars						
Canadian Dollar			$ (0.7)			$ (3.8)
Notional (million US$) - long Canadian dollars	39.9	—		63.3	—	
Weighted Average Participation Rate - Canadian dollar to U.S. dollar	1.3336	—		1.3090	—	
Weighted Average Protection Rate - Canadian dollar to U.S. dollar	1.2300	—		1.2219	—	
Foreign Currency Exchange Non-Deliverable Forwards						
Brazilian Real			$ (1.8)			$ (1.3)
Notional (million US$) - short Brazilian real	$202.6	$—		$211.3	$—	
Weighted Average Rate - Brazilian real to U.S. dollar	3.4237	—		3.9130	—	
Notional (million US$) - long Brazilian real	$186.7	$—		$59.5	$—	
Weighted Average Rate - Brazilian real to U.S. dollar	3.6717	—		3.6386	—	
Indian Rupee			$ —			$ (0.5)
Notional (million US$) - short Indian rupee	$122.5	$—		$136.0	$—	
Weighted Average Rate - Indian rupee to U.S. dollar	68.6216	—		67.0696	—	
Total Fair Value			$ (6.5)			$ (54.0)

Commodities

We use forward purchase contracts, swaps and occasionally three-way collars to reduce the risk related to significant price changes in our inputs and product prices. In addition, the natural gas-based pricing under the CF Ammonia Supply Agreement is intended to lessen ammonia pricing volatility.

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Our commodities contracts do not qualify for hedge accounting; therefore, all gains and losses are recorded in the Consolidated Statements of Earnings. Gains and losses on commodities contracts are recorded in cost of goods sold in the Consolidated Statements of Earnings.
As of December 31, 2016 and 2015, the fair value of our major commodities contracts were $6.0 million and $(16.3) million, respectively. We recorded an unrealized gain of $21.5 million in cost of goods sold on the Consolidated Statements of Earnings in 2016.
Our primary commodities exposure relates to price changes in natural gas.
The table below provides information about Mosaic's natural gas derivatives which are used to manage the risk related to significant price changes in natural gas.

	As of December 31, 2016				As of December 31, 2015		
	Expected Maturity Date Years ending December 31,			Fair Value	Expected Maturity Date Years ending December 31,		Fair Value
(in millions)	2017	2018	2019		2016	2017	
Natural Gas Swaps				$ 6.0			$(16.3)
Notional (million MMBtu) - long	12.1	4.8	4.8		23.5	8.9	
Weighted Average Rate (US$/MMBtu)	$2.62	$2.44	$2.43		$2.76	$2.75	
Total Fair Value				$ 6.0			$(16.3)

Interest Rates
We manage interest expense through interest rate contracts to convert a portion of our fixed-rate debt into floating-rate debt. We also enter into interest rate swap agreements to hedge our exposure to changes in future interest rates related to anticipated debt issuances. As of December 31, 2016 and 2015, the fair value of our interest rate contracts was $0.2 million and $(0.1) million, respectively.
Summary
Overall, there have been no material changes in our primary market risk exposures since the prior year. We do not expect any material changes in our primary risk exposures in 2017. Additional information about market risk associated with our investments held in the RCRA Trusts is provided in Note 11 of our Notes to Consolidated Financial Statements. For additional information related to derivatives, see Notes 14 and 15 of our Notes to Consolidated Financial Statements.
Environmental, Health, Safety and Security Matters
We are subject to an evolving complex of international, federal, state, provincial and local environmental, health, safety and security ("EHS") laws that govern the production, distribution and use of crop nutrients and animal feed ingredients. These EHS laws regulate or propose to regulate: (i) conduct of mining, production and supply chain operations, including employee safety and facility security procedures; (ii) management and/or remediation of potential impacts to air, soil and water quality from our operations; (iii) disposal of waste materials; (iv) reclamation of lands after mining; (v) management and handling of raw materials; (vi) product content; and (vii) use of products by both us and our customers.
We have a comprehensive EHS management program that seeks to achieve sustainable, predictable and verifiable EHS performance. Key elements of our EHS program include: (i) identifying and managing EHS risk; (ii) complying with legal requirements; (iii) improving our EHS procedures and protocols; (iv) educating employees regarding EHS obligations; (v) retaining and developing professional qualified EHS staff; (vi) evaluating facility conditions; (vii) evaluating and enhancing safe workplace behaviors; (viii) performing audits; (ix) formulating EHS action plans; and (x) assuring accountability of all managers and other employees for EHS performance. Our business units are responsible for implementing day-to-day elements of our EHS program, assisted by an integrated staff of EHS professionals. We conduct audits to verify that each facility has identified risks, achieved regulatory compliance, implemented continuous EHS improvement, and incorporated EHS management systems into day-to-day business functions.

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New or proposed regulatory programs can present significant challenges in ascertaining future compliance obligations, implementing compliance plans, and estimating future costs until implementing regulations have been finalized and definitive regulatory interpretations have been adopted. New or proposed regulatory requirements may require modifications to our facilities or to operating procedures and these modifications may involve significant capital costs or increases in operating costs.

We have expended, and anticipate that we will continue to expend, substantial financial and managerial resources to comply with EHS standards and to continue to improve our environmental stewardship. In 2017, excluding capital expenditures arising out of the consent decrees referred to under "EPA RCRA Initiative" in Note 13 of our Notes to Consolidated Financial Statements, we expect environmental capital expenditures to total approximately $200 million, primarily related to: (i) modification or construction of waste management infrastructure and water treatment systems; (ii) construction and modification projects associated with Gypstacks and clay settling ponds at our Phosphates facilities and tailings management areas for our Potash mining and processing facilities; (iii) upgrading or new construction of air pollution control equipment at some of the concentrates plants; and (iv) capital projects associated with remediation of contamination at current or former operations. Additional expenditures for land reclamation, Gypstack closure and water treatment activities are expected to total approximately $120 million in 2017. In 2018, we estimate environmental capital expenditures will be approximately $310 million and expenditures for land reclamation activities, Gypstack closure and water treatment activities are expected to be approximately $110 million. In the years ended December 31, 2016 and 2015, we spent approximately $310 million and $280 million, respectively, for environmental capital expenditures, land reclamation activities, Gypstack closure and water treatment activities. No assurance can be given that greater-than-anticipated EHS capital expenditures or land reclamation, Gypstack closure or water treatment expenditures will not be required in 2017 or in the future.

Operating Requirements and Impacts

Permitting. We hold numerous environmental, mining and other permits or approvals authorizing operation at each of our facilities. Our ability to continue operations at a facility could be materially affected by a government agency decision to deny or delay issuing a new or renewed permit or approval, to revoke or substantially modify an existing permit or approval, to substantially change conditions applicable to a permit modification, or by legal actions that successfully challenge our permits.

Expanding our operations or extending operations into new areas is also predicated upon securing the necessary environmental or other permits or approvals. We have been engaged in, and over the next several years will be continuing, efforts to obtain permits in support of our anticipated Florida mining operations at certain of our properties. For years, we have successfully permitted mining properties and anticipate that we will be able to permit these properties as well.

A denial of our permits, the issuance of permits with cost-prohibitive conditions, substantial delays in issuing key permits, legal actions that prevent us from relying on permits or revocation of permits can prevent or delay our mining at the affected properties and thereby materially affect our business, results of operations, liquidity or financial condition.

In addition, in Florida, local community involvement has become an increasingly important factor in the permitting process for mining companies, and various counties and other parties in Florida have in the past filed and continue to file lawsuits challenging the issuance of some of the permits we require. These actions can significantly delay permit issuance. Additional information regarding certain potential or pending permit challenges is provided in Note 21 to our Consolidated Financial Statements and is incorporated herein by reference.

Waters of the United States. In April 2014, EPA and the U.S. Army Corps of Engineers jointly issued a proposed rule that would redefine the scope of waters regulated under the federal Clean Water Act. The final rule became effective in August 2015, but has been challenged through numerous lawsuits. In October 2015, the U.S. Court of Appeals for the Sixth Circuit issued an order staying the effectiveness of the final rule until after the legal validity of the regulation is resolved. We believe the new definition would expand the types and extent of water resources regulated under federal law, thereby potentially expanding our permitting and reporting requirements, increasing our costs of compliance, including costs associated with wetlands and stream mitigation, lengthening the time necessary to obtain permits, and potentially restricting our ability to mine certain of our phosphate rock reserves.

Water Quality Regulations for Nutrient Discharges. There are several ongoing initiatives relating to nutrient discharges. New regulatory restrictions from these initiatives could have a material effect on either us or our customers. For example:

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Water Quality Regulations for Nutrient Discharges in Florida. The FDEP has adopted state nutrient criteria rules (the "Florida NNC Rule") to supplant the requirements of numeric water quality standards for the discharge of nitrogen and/or phosphorus into Florida lakes and streams that were adopted by EPA in December 2010 (the "NNC Rule"). While EPA has withdrawn the federal NNC Rule and the FDEP criteria now are effective, the possibility remains that still-pending litigation relating to the NNC Rule future litigation could challenge EPA's withdrawal or the effectiveness of the Florida NNC Rule. Subject to further litigation developments, we expect that compliance with the requirements of nutrient criteria rules could adversely affect our Florida Phosphate operations, require significant capital expenditures or substantially increase our annual operating expenses.

Nutrient Discharges into the Gulf of Mexico and Mississippi River Basin. The Gulf Coast Ecosystem Restoration Task Force, established by executive order of the President and comprised of five Gulf states and eleven federal agencies, has delivered a final strategy for long-term ecosystem restoration for the Gulf Coast. The strategy calls for, among other matters, reduction of the flow of excess nutrients into the Gulf of Mexico through state nutrient reduction frameworks, new nutrient reduction approaches and reduction of agricultural and urban sources of excess nutrients. Implementation of the strategy will require legislative or regulatory action at the state level. We cannot predict what the requirements of any such legislative or regulatory action could be or whether or how it would affect us or our customers.

In March 2012, several non-governmental organizations brought a lawsuit in federal court against EPA, seeking to require it to establish numeric nutrient criteria for nitrogen and phosphorous in the Mississippi River basin and the Gulf of Mexico. EPA had previously denied a 2008 petition seeking such standards. Following a number of legal developments, in December 2016 the district court granted EPA's motion for summary judgment. However, an appeal of that decision is possible. In the event that EPA were to establish numeric nutrient criteria for nitrogen and phosphorous in the Mississippi River basin and the Gulf of Mexico, we cannot predict what its requirements would be or the effects it would have on us or our customers. This matter is discussed in greater detail in this report in Part I. Item 3. "Legal Proceedings."

Reclamation Obligations. During our phosphate mining operations, we remove overburden in order to retrieve phosphate rock reserves. Once we have finished mining in an area, we use the overburden and sand tailings produced by the beneficiation process to reclaim the area in accordance with approved reclamation plans and applicable laws. We have incurred and will continue to incur significant costs to fulfill our reclamation obligations.

Management of Residual Materials and Closure of Management Areas. Mining and processing of potash and phosphate generate residual materials that must be managed both during the operation of the facility and upon facility closure. Potash tailings, consisting primarily of salt and clay, are stored in surface disposal sites. Phosphate clay residuals from mining are deposited in clay settling ponds. Processing of phosphate rock with sulfuric acid generates phosphogypsum that is stored in Gypstacks.

During the life of the tailings management areas, clay settling ponds and Gypstacks, we have incurred and will continue to incur significant costs to manage our potash and phosphate residual materials in accordance with environmental laws and regulations and with permit requirements. Additional legal and permit requirements will take effect when these facilities are closed. Our asset retirement obligations are further discussed in Note 13 of our Notes to Consolidated Financial Statements.

New Wales Water Loss Incident. In August 2016, a sinkhole developed under one of the two cells of the active Gypstack at our New Wales facility in Polk County, Florida, resulting in process water from the stack draining into the sinkhole. The incident was reported to the FDEP and EPA and in connection with the incident, our subsidiary, Mosaic Fertilizer, LLC (“Mosaic Fertilizer”), entered into a consent order (the “Order”) with the FDEP in October 2016 under which Mosaic Fertilizer agreed to, among other things, implement an approved remediation plan to close the sinkhole; perform additional water monitoring and if necessary, assessment and rehabilitation activities in the event of identified off-site impacts; provide financial assurance; and evaluate the risk of potential future sinkhole formation at our active Florida Gypstack operations. The incident and the Order are further discussed in Note 21 of our Notes to Consolidated Financial Statements.

Financial Assurance. Separate from our accounting treatment for reclamation and closure liabilities, some jurisdictions in which we operate have required us either to pass a test of financial strength or provide credit support, typically cash deposits, surety bonds, financial guarantees or letters of credit, to address phosphate mining reclamation liabilities and closure liabilities for clay settling areas and Gypstacks. See "Other Commercial Commitments" under "Off-Balance Sheet Arrangements and Obligations" above for additional information about these requirements. Among other matters, EPA and its

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state agency analogues engaged in previous years in an ongoing review of mineral processing industries, including us and other phosphoric acid producers, under the U.S. Resource Conservation and Recovery Act and state hazardous waste laws. Following negotiations with EPA and state agencies, in 2015 we entered into two separate consent decrees that became effective in 2016 and resolved claims relating to our management of certain waste materials onsite at certain fertilizer manufacturing facilities in Florida and Louisiana. Under these consent decrees, in 2016 we deposited $630 million in cash into two trust funds to provide additional financial assurance for the estimated costs of closure and post-closure care of our phosphogypsum management systems. While our actual Gypstack Closure Costs are generally expected to be paid by us in the normal course of our Phosphates business over a period that may not end until three decades or more after a Gypstack has been closed, the funds on deposit in the RCRA Trusts can be drawn by the applicable governmental authority in the event we cannot perform our closure and long term care obligations. If and when our estimated Gypstack Closure Costs with respect to the facilities associated with a RCRA Trust are sufficiently lower than the amount on deposit in that RCRA Trust, we have the right to request that the excess funds be released to us. The same is true for the RCRA Trust balance remaining after the completion of our obligations, which will be performed over a period that may not end until three decades or more after a Gypstack has been closed. See the discussion under “EPA RCRA Initiative” in Note 13 of our Notes to Consolidated Financial Statements for additional information about this matter.

We have accepted a proposal by the Province of Saskatchewan under which we would establish a trust valued at $25 million in satisfaction of financial assurance requirements for closure of our Saskatchewan potash facilities. The trust is to be fully funded by us by 2021 in equal annual installments which began in July 2014.

In addition, in January 2017 proposed rules were issued under the U.S. Comprehensive Environmental Response, Compensation, and Liability Act, commonly known as CERCLA or the Superfund law, that would require owners and operators of certain classes of hardrock mines and mineral processing facilities to demonstrate financial ability to cover potential costs of future cleanup efforts for their operations and costs of health assessments and natural resource damage. As proposed, the rules would apply to phosphate mining, phosphate fertilizer manufacturing and potash mining operations. We cannot predict at this time whether the rules will be promulgated as proposed or what, if any, financial assurance requirements may ultimately be developed or required for our operations. Accordingly, we cannot predict the prospective impact of any such financial responsibility requirements on our results of operations, liquidity or capital resources, or whether any such effects could be material to us.

Climate Change

We are committed to finding ways to meet the challenges of crop nutrient and animal feed ingredient production and distribution in the context of the need to reduce greenhouse gas emissions. While focused on helping the world grow the food it needs, we have proven our commitment to using our resources more efficiently and have implemented innovative energy recovery technologies that result in our generation of much of the energy we need, particularly in our U.S. Phosphates operations, from high efficiency heat recovery systems that result in lower greenhouse gas emissions.

Climate Change Regulation. Various governmental initiatives to limit greenhouse gas emissions are under way or under consideration around the world. These initiatives could restrict our operating activities, require us to make changes in our operating activities that would increase our operating costs, reduce our efficiency or limit our output, require us to make capital improvements to our facilities, increase our energy, raw material and transportation costs or limit their availability, or otherwise adversely affect our results of operations, liquidity or capital resources, and these effects could be material to us.

The direct greenhouse gas emissions from our operations result primarily from:

- Combustion of natural gas to produce steam and dry potash products at our Belle Plaine, Saskatchewan, potash solution mine. To a lesser extent, at our potash shaft mines, natural gas is used as a fuel to heat fresh air supplied to the shaft mines and for drying potash products.
- The use of natural gas as a feedstock in the production of ammonia at our Faustina, Louisiana phosphates plant.
- Process reactions from naturally occurring carbonates in phosphate rock.

In addition, the production of energy and raw materials that we purchase from unrelated parties for use in our business and energy used in the transportation of our products and raw materials are sources of greenhouse gas emissions.

Governmental greenhouse gas emission initiatives include, among others, the December 2015 agreement (the "Paris Agreement") which was the outcome of the 21st session of the Conference of the Parties under the United Nations Framework Convention on Climate Change ("UNFCCC"). The Paris Agreement, which was signed by nearly 200 nations including the United States and Canada, entered into force in late 2016 and sets out a goal of limiting the average rise in temperatures for this century to below 2 degrees Celsius. Each signatory is expected to develop its own plan (referred to as a Nationally Determined Contribution, or "NDC") for reaching that goal.

The NDC submitted by the United States aims to achieve, by 2025, an economy-wide target of reducing greenhouse gas emissions by 26-28% below its 2005 level. It also aims to use best efforts to reduce its emissions by 28%. The U.S. target covers all greenhouse gases that were a part of the 2014 Inventory of Greenhouse Gas Emissions and Sinks. While it is unclear whether the new U.S. executive administration will seek to implement the U.S. NDC, various legislative or regulatory initiatives relating to greenhouse gases have been adopted or considered by the U.S. Congress, EPA or various states and those initiatives already adopted may be used to implement the U.S. NDC. Additionally, more stringent laws and regulations may be enacted to accomplish the goals set out in the NDC.

Canada's intended NDC aims to achieve, by 2030, an economy-wide target of reducing greenhouse gas emissions by 30% below 2005 levels. In addition, in late 2016 the federal government announced plans for a comprehensive tax on carbon emissions, under which provinces opting out of the tax would have the option of adopting a cap-and-trade system. While no tax has formally been proposed, as implementation of the Paris Agreement proceeds, more stringent laws and regulations may be enacted to accomplish the goals set out in Canada's NDC. In addition, the Province of Saskatchewan, in which our Canadian potash mines are located, has passed legislation to facilitate the development and administration of climate change regulation in Saskatchewan by the Province rather than the federal government. This legislation is not yet effective, but key elements under consideration by the Province include establishing a provincial greenhouse gas emission reduction target, and compliance mechanisms that would provide flexibility for regulated emitters to meet their greenhouse gas reduction obligations. Our Saskatchewan Potash facilities will continue to work with the Saskatchewan Ministry of Environment and Environment Canada, through participation in industry associations, to determine next steps. We will also continue to monitor developments relating to the anticipated proposed legislation, as well as the potential future effect on our operating activities, energy, raw material and transportation costs, results of operations, liquidity or capital resources.

It is possible that future legislation or regulation addressing climate change, including in response to the Paris Agreement or any new international agreements, could adversely affect our operating activities, energy, raw material and transportation costs, results of operations, liquidity or capital resources, and these effects could be material. In addition, to the extent climate change restrictions imposed in countries where our competitors operate, such as China, India, Former Soviet Union countries or Morocco, are less stringent than in the United States or Canada, our competitors could gain cost or other competitive advantages over us.

Operating Impacts Due to Climate Change. The prospective impact of potential climate change on our operations and those of our customers and farmers remains uncertain. Scientists have hypothesized that the impacts of climate change could include changes in rainfall patterns, water shortages, changing sea levels, changing storm patterns and intensities, and changing temperature levels and that these changes could be severe. These impacts could vary by geographic location. Severe climate change could impact our costs and operating activities, the location and cost of global grain and oilseed production, and the supply and demand for grains and oilseeds. At the present time, we cannot predict the prospective impact of potential climate change on our results of operations, liquidity or capital resources, or whether any such effects could be material to us.

Remedial Activities

CERCLA (aka Superfund) and state analogues impose liability, without regard to fault or to the legality of a party's conduct, on certain categories of persons, including those who have disposed of "hazardous substances" at a third-party location. Under Superfund, or its various state analogues, one party may be responsible for the entire site, regardless of fault or the locality of its disposal activity. We have contingent environmental remedial liabilities that arise principally from three sources which are further discussed below: (i) facilities currently or formerly owned by our subsidiaries or their predecessors; (ii) facilities adjacent to currently or formerly owned facilities; and (iii) third-party Superfund or state equivalent sites where we are alleged to have disposed of hazardous materials. Taking into consideration established accruals for environmental remedial matters of approximately $79.6 million as of December 31, 2016, expenditures for these known conditions currently are not expected, individually or in the aggregate, to have a material effect on our business or financial condition. However, material expenditures could be

required in the future to remediate the contamination at known sites or at other current or former sites.
Remediation at Our Facilities. Many of our formerly owned or current facilities have been in operation for a number of years. The historical use and handling of regulated chemical substances, crop and animal nutrients and additives as well as

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by-product or process tailings at these facilities by us and predecessor operators have resulted in soil, surface water and groundwater impacts.

At many of these facilities, spills or other releases of regulated substances have occurred previously and potentially could occur in the future, possibly requiring us to undertake or fund cleanup efforts under Superfund or otherwise. In some instances, we have agreed, pursuant to consent orders or agreements with the appropriate governmental agencies, to undertake certain investigations, which currently are in progress, to determine whether remedial action may be required to address site impacts. At other locations, we have entered into consent orders or agreements with appropriate governmental agencies to perform required remedial activities that will address identified site conditions. Taking into account established accruals, future expenditures for these known conditions currently are not expected, individually or in the aggregate, to have a material adverse effect on our business or financial condition. However, material expenditures by us could be required in the future to remediate the environmental impacts at these or at other current or former sites.

Remediation at Third-Party Facilities. Various third parties have alleged that our historical operations have impacted neighboring off-site areas or nearby third-party facilities. In some instances, we have agreed, pursuant to orders from or agreements with appropriate governmental agencies or agreements with private parties, to undertake or fund investigations, some of which currently are in progress, to determine whether remedial action, under Superfund or otherwise, may be required to address off-site impacts. Our remedial liability at these sites, either alone or in the aggregate, taking into account established accruals, currently is not expected to have a material adverse effect on our business or financial condition. As more information is obtained regarding these sites, this expectation could change.

Liability for Off-Site Disposal Locations. Currently, we are involved or concluding involvement for off-site disposal at several Superfund or equivalent state sites. Moreover, we previously have entered into settlements to resolve liability with regard to Superfund or equivalent state sites. In some cases, such settlements have included “reopeners,” which could result in additional liability at such sites in the event of newly discovered contamination or other circumstances. Our remedial liability at such disposal sites, either alone or in the aggregate, currently is not expected to have a material adverse effect on our business or financial condition. As more information is obtained regarding these sites and the potentially responsible parties involved, this expectation could change.

Product Requirements and Impacts

International, federal, state and provincial standards require us to register many of our products before these products can be sold. The standards also impose labeling requirements on these products and require us to manufacture the products to formulations set forth on the labels. We believe that, when handled and used as intended, based on the available data, crop nutrient materials do not pose harm to human health or the environment and that any additional standards or regulatory requirements relating to product requirements and impacts will not have a material adverse effect on our business or financial condition.

Additional Information

For additional information about phosphate mine permitting in Florida, our environmental liabilities, the environmental proceedings in which we are involved, our asset retirement obligations related to environmental matters, and our related accounting policies, see Environmental Liabilities and AROs under Critical Accounting Estimates above and Notes 2, 13, and 21 of our Notes to Consolidated Financial Statements.

Sustainability

We are committed to making informed choices that improve our corporate governance, financial strength, operational efficiency, environmental stewardship, community engagement and resource management. Through these efforts, we intend to sustain our business and experience lasting success.

We have included, or incorporate by reference, throughout this annual report on Form 10-K discussions of various matters relating to our sustainability, in its broadest sense, that we believe may be material to our investors. These matters include but are not limited to discussions about: corporate governance including the leadership and respective roles of our Board of Directors, its committees and management as well as succession planning; recent and prospective developments in our business; product development; risk, enterprise risk management and risk oversight; the regulatory and permitting environment for our business and ongoing regulatory and permitting initiatives; executive compensation practices; employee and contractor safety; and other EHS matters including climate change, water management, energy and other operational

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efficiency initiatives, reclamation and asset retirement obligations. Other matters relating to sustainability are included in our sustainability reports that are available on our website at www.mosaicco.com/sustainability. Our sustainability reports are not incorporated by reference in this annual report on Form 10-K.

Contingencies

Information regarding contingencies in Note 21 of our Notes to Consolidated Financial Statements is incorporated herein by reference.

Related Parties

Information regarding related party transactions is set forth in Note 22 of our Notes to Consolidated Financial Statements and is incorporated herein by reference.

Recently Issued Accounting Guidance

Recently issued accounting guidance is set forth in Note 3 of our Notes to Consolidated Financial Statements and is incorporated herein by reference.

Forward-Looking Statements

Cautionary Statement Regarding Forward Looking Information

All statements, other than statements of historical fact, appearing in this report constitute “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. These statements include, among other things, statements about our expectations, beliefs, intentions or strategies for the future, including statements about our proposed acquisition of the global phosphate and potash operations of Vale S.A. (“Vale”) conducted through Vale Fertilizantes S.A. (the “Transaction”) and the anticipated benefits and synergies of the proposed Transaction, statements about MWSPC and its nature, impact and benefits, statements about other proposed or pending future transactions or strategic plans, statements concerning our future operations, financial condition and prospects, statements regarding our expectations for capital expenditures, statements concerning our level of indebtedness and other information, and any statements of assumptions regarding any of the foregoing. In particular, forward-looking statements may include words such as "anticipate", "believe", "could", "estimate", "expect", "intend", "may", "potential", "predict", "project" or "should". These statements involve certain risks and uncertainties that may cause actual results to differ materially from expectations as of the date of this filing.

Factors that could cause reported results to differ materially from those expressed or implied by the forward-looking statements include, but are not limited to, the following:

- risks and uncertainties arising from the possibility that the closing of the proposed Transaction may be delayed or may not occur, including delays or risks arising from any inability to obtain governmental approvals of the Transaction on the proposed terms and schedule, any inability of Vale to achieve certain other specified regulatory and operational milestones or to successfully complete the transfer of the Cubatão business to Vale and its affiliates in a timely manner, and the ability to satisfy any of the other closing conditions; our ability to secure financing, or financing on satisfactory terms and in amounts sufficient to fund the cash portion of the purchase price without the need for additional funds from other liquidity sources; and difficulties with realization of the benefits of the proposed Transaction, including the risks that the acquired business may not be integrated successfully or that the anticipated synergies or cost or capital expenditure savings from the Transaction may not be fully realized or may take longer to realize than expected, including because of political and economic instability in Brazil or changes in government policy in Brazil;
- business and economic conditions and governmental policies affecting the agricultural industry where we or our customers operate, including price and demand volatility resulting from periodic imbalances of supply and demand;
- changes in farmers’ application rates for crop nutrients;
- changes in the operation of world phosphate or potash markets, including continuing consolidation in the crop nutrient industry, particularly if we do not participate in the consolidation;
- pressure on prices realized by us for our products;

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- the expansion or contraction of production capacity or selling efforts by competitors or new entrants in the industries in which we operate, including the effects of actions by members of Canpotex to prove the production capacity of potash expansion projects, through proving runs or otherwise;
- the expected cost of MWSPC and our expected investment in it, the amount, terms, availability and sufficiency of funding for MWSPC from us, Ma'aden, SABIC and existing or future external sources, the ability of MWSPC to obtain additional planned funding in acceptable amounts and upon acceptable terms, the timely development and commencement of operations of production facilities in the Kingdom of Saudi Arabia, political and economic instability in the region, and in general the future success of current plans for the joint venture and any future changes in those plans;
- build-up of inventories in the distribution channels for our products that can adversely affect our sales volumes and selling prices;
- the effect of future product innovations or development of new technologies on demand for our products;
- seasonality in our business that results in the need to carry significant amounts of inventory and seasonal peaks in working capital requirements, and may result in excess inventory or product shortages;
- changes in the costs, or constraints on supplies, of raw materials or energy used in manufacturing our products, or in the costs or availability of transportation for our products;
- declines in our selling prices or significant increases in costs that can require us to write down our inventories to the lower of cost or market, or require us to impair goodwill or other long-lived assets, or establish a valuation allowance against deferred tax assets;
- the effects on our customers of holding high cost inventories of crop nutrients in periods of rapidly declining market prices for crop nutrients;
- the lag in realizing the benefit of falling market prices for the raw materials we use to produce our products that can occur while we consume raw materials that we purchased or committed to purchase in the past at higher prices;
- customer expectations about future trends in the selling prices and availability of our products and in farmer economics;
- disruptions to existing transportation or terminaling facilities, including those of Canpotex or any joint venture in which we participate;
- shortages or other unavailability of railcars, tugs, barges and ships for carrying our products and raw materials;
- the effects of and change in trade, monetary, environmental, tax and fiscal policies, laws and regulations;
- foreign exchange rates and fluctuations in those rates;
- tax regulations, currency exchange controls and other restrictions that may affect our ability to optimize the use of our liquidity;
- other risks associated with our international operations, including any potential adverse effects related to our joint venture interest in the Miski Mayo mine in the event that protests against natural resource companies in Peru were to extend to or impact the Miski Mayo mine;
- adverse weather conditions affecting our operations, including the impact of potential hurricanes, excessive heat, cold, snow or rainfall, or drought;
- difficulties or delays in receiving, challenges to, increased costs of obtaining or satisfying conditions of, or revocation or withdrawal of required governmental and regulatory approvals, including permitting activities;
- changes in the environmental and other governmental regulation that applies to our operations, including federal legislation or regulatory action expanding the types and extent of water resources regulated under federal law and the possibility of further federal or state legislation or regulatory action affecting or related to greenhouse gas emissions, including carbon taxes or other measures that may be proposed in Canada or other jurisdictions in which we operate, or of restrictions or liabilities related to elevated levels of naturally-occurring radiation that arise from disturbing the ground in the course of mining activities or possible efforts to reduce the flow of nutrients into the Gulf of Mexico, the Mississippi River basin or elsewhere;

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- the potential costs and effects of implementation of federal or state water quality standards for the discharge of nitrogen and/or phosphorus into Florida waterways;
- the financial resources of our competitors, including state-owned and government-subsidized entities in other countries;
- the possibility of defaults by our customers on trade credit that we extend to them or on indebtedness that they incur to purchase our products and that we guarantee, particularly when we are exiting our business operations or locations that produced or sold the products to that customer;
- any significant reduction in customers' liquidity or access to credit that they need to purchase our products;
- the effectiveness of our risk management strategy;
- the effectiveness of the processes we put in place to manage our significant strategic priorities, including the expansion of our Potash business and our investment in MWSPC, and to successfully integrate and grow acquired businesses;
- actual costs of various items differing from management's current estimates, including, among others, asset retirement, environmental remediation, reclamation or other environmental obligations and Canadian resource taxes and royalties, or the costs of MWSPC, its existing or future funding and our commitments in support of such funding;
- the costs and effects of legal and administrative proceedings and regulatory matters affecting us, including environmental, tax or administrative proceedings, complaints that our operations are adversely impacting nearby farms, businesses, other property uses or properties, settlements thereof and actions taken by courts with respect to approvals of settlements, resolution of global tax audit activity, and other further developments in legal proceedings and regulatory matters;
- the success of our efforts to attract and retain highly qualified and motivated employees;
- strikes, labor stoppages or slowdowns by our work force or increased costs resulting from unsuccessful labor contract negotiations, and the potential costs and effects of compliance with new regulations affecting our workforce, which increasingly focus on wages and hours, healthcare, retirement and other employee benefits;
- brine inflows at our Esterhazy, Saskatchewan potash mine as well as potential inflows at our other shaft mines;
- accidents or other incidents involving our properties or operations, including potential fires, explosions, seismic events, sinkholes, unsuccessful tailings management or releases of hazardous or volatile chemicals;
- terrorism or other malicious intentional acts, including cybersecurity risks such as attempts to gain unauthorized access to, or disable, our information technology systems, or our costs of addressing malicious intentional acts;
- other disruptions of operations at any of our key production and distribution facilities, particularly when they are operating at high operating rates;
- changes in antitrust and competition laws or their enforcement;
- actions by the holders of controlling equity interests in businesses in which we hold a noncontrolling interest;
- changes in our relationships with other members of Canpotex or any joint venture in which we participate or their or our exit from participation in Canpotex or any such export association or joint venture, and other changes in our commercial arrangements with unrelated third parties;
- the adequacy of our property, business interruption and casualty insurance policies to cover potential hazards and risks incident to our business, and our willingness and ability to maintain current levels of insurance coverage as a result of market conditions, our loss experience and other factors;
- difficulties in realizing benefits under our long-term natural gas based pricing ammonia supply agreement with CF Industries, Inc., including the risks that the cost savings initially anticipated from the agreement may not be fully realized over the term of the agreement or that the price of natural gas or the market price for ammonia during the agreement's term are at levels at which the agreement's natural gas based pricing is disadvantageous to us, compared with purchases in the spot market; and
- other risk factors reported from time to time in our Securities and Exchange Commission reports.

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Material uncertainties and other factors known to us are discussed in Item 1A, "Risk Factors," of our annual report on Form 10-K for the year ended December 31, 2016 and incorporated by reference herein as if fully stated herein.
We base our forward-looking statements on information currently available to us, and we undertake no obligation to update or revise any of these statements, whether as a result of changes in underlying factors, new information, future events or other developments.

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
The Mosaic Company:

We have audited the accompanying consolidated balance sheets of The Mosaic Company and subsidiaries as of December 31, 2016 and 2015, and the related consolidated statements of earnings, comprehensive income, cash flows, and equity for each of the years in the three year period ended December 31, 2016. In connection with our audits of the consolidated financial statements, we also have audited Schedule II-Valuation and Qualifying Accounts for each of the years in the three year period ended December 31, 2016. These consolidated financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements and financial statement schedule based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of The Mosaic Company and subsidiaries as of December 31, 2016 and 2015, and the results of their operations and their cash flows for each of the years in the three year period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles. In our opinion, the related financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), The Mosaic Company's internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated February 15, 2017 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

/s/ KPMG LLP
Minneapolis, Minnesota
February 15, 2017

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
The Mosaic Company:
We have audited The Mosaic Company's internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Mosaic Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.
We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.
A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.
Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.
In our opinion, The Mosaic Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).
We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of The Mosaic Company and subsidiaries as of December 31, 2016 and 2015, and the related consolidated statements of earnings, comprehensive income, cash flows, and equity for each of the years in the three-year period ended December 31, 2016. In connection with our audits of the consolidated financial statements, we also have audited Schedule II, Valuation of Qualifying Accounts, for each of the years in the three-year period ended December 31, 2016. Our report dated February 15, 2017 expressed an unqualified opinion on those consolidated financial statements.

/s/ KPMG LLP
Minneapolis, Minnesota
February 15, 2017

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Consolidated Statements of Earnings
In millions, except per share amounts

	Years Ended December 31,		
	2016	2015	2014
Net sales	$7,162.8	$8,895.3	$9,055.8
Cost of goods sold	6,352.8	7,177.4	7,129.2
Gross margin	810.0	1,717.9	1,926.6
Selling, general and administrative expenses	304.2	361.2	382.4
Gain on assets sold and to be sold	—	—	(16.4)
Carlsbad restructuring expense	—	—	125.4
Other operating expenses	186.8	77.9	123.4
Operating earnings	319.0	1,278.8	1,311.8
Loss in value of share repurchase agreement	—	—	(60.2)
Interest expense, net	(112.4)	(97.8)	(107.6)
Foreign currency transaction gain (loss)	40.1	(60.5)	79.1
Other expense	(4.3)	(17.2)	(5.8)
Earnings from consolidated companies before income taxes	242.4	1,103.3	1,217.3
(Benefit from) provision for income taxes	(74.2)	99.1	184.7
Earnings from consolidated companies	316.6	1,004.2	1,032.6
Equity in net earnings (loss) of nonconsolidated companies	(15.4)	(2.4)	(2.2)
Net earnings including noncontrolling interests	301.2	1,001.8	1,030.4
Less: Net earnings attributable to noncontrolling interests	3.4	1.4	1.8
Net earnings attributable to Mosaic	$297.8	$1,000.4	$1,028.6
Basic net earnings per share attributable to Mosaic	$0.85	$2.79	$2.69
Basic weighted average number of shares outstanding	350.4	358.5	374.1
Diluted net earnings per share attributable to Mosaic	$0.85	$2.78	$2.68
Diluted weighted average number of shares outstanding	351.7	360.3	375.6

See Accompanying Notes to Consolidated Financial Statements

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Consolidated Statements of Comprehensive Income
In millions

	Years Ended December 31,		
	2016	2015	2014
Net earnings including noncontrolling interest	$301.2	$1,001.8	$1,030.4
Other comprehensive income (loss), net of tax			
Foreign currency translation, net of tax benefit of $9.8, $85.4 and $87.0, respectively	192.3	(1,027.1)	(560.8)
Net actuarial gain (loss) and prior service cost, net of tax benefit of $3.1, $1.0, and $20.5, respectively	(3.2)	1.0	(38.2)
Realized gain on interest rate swap, net of tax (expense) benefit of ($1.0), ($0.6) and $6.3, respectively	1.5	2.0	9.0
Net loss on marketable securities held in trust fund, net of tax benefit of $3.3	(7.8)	—	—
Other comprehensive income (loss)	182.8	(1,024.1)	(590.0)
Comprehensive income (loss)	484.0	(22.3)	440.4
Less: Comprehensive income (loss) attributable to noncontrolling interest	5.5	(3.5)	(0.2)
Comprehensive income (loss) attributable to Mosaic	$478.5	$(18.8)	$440.6

See Accompanying Notes to Consolidated Financial Statements

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Consolidated Balance Sheets
In millions, except per share amounts

	December 31, 2016	December 31, 2015
Assets		
Current assets:		
Cash and cash equivalents	$673.1	$1,276.3
Receivables, net	627.8	675.0
Inventories	1,391.1	1,563.5
Other current assets	365.7	628.6
Total current assets	3,057.7	4,143.4
Property, plant and equipment, net	9,198.5	8,721.0
Investments in nonconsolidated companies	1,063.1	980.5
Goodwill	1,630.9	1,595.3
Deferred income taxes	836.4	691.9
Other assets	1,054.1	1,257.4
Total assets	$16,840.7	$17,389.5
Liabilities and Equity		
Current liabilities:		
Short-term debt	$0.1	$25.5
Current maturities of long-term debt	38.8	41.7
Structured accounts payable arrangements	128.8	481.7
Accounts payable	471.8	520.6
Accrued liabilities	837.3	977.5
Total current liabilities	1,476.8	2,047.0
Long-term debt, less current maturities	3,779.3	3,769.5
Deferred income taxes	1,009.2	977.4
Other noncurrent liabilities	952.9	1,030.6
Equity:		
Preferred stock, $0.01 par value, 15,000,000 shares authorized, none issued and outstanding as of December 31, 2016 and 2015	—	—
Class A common stock, $0.01 par value, none authorized, issued and outstanding as of December 31, 2016, 194,203,987 shares authorized, none issued and outstanding as of December 31, 2015	—	—
Class B common stock, $0.01 par value, none authorized, issued, and outstanding as of December 31, 2016, 87,008,602 shares authorized, none issued and outstanding as of December 31, 2015	—	—
Common stock, $0.01 par value, 1,000,000,000 shares authorized, 388,187,398 shares issued and 350,238,549 shares outstanding as of December 31, 2016, 387,697,547 shares issued and 352,515,256 shares outstanding as of December 31, 2015	3.5	3.5
Capital in excess of par value	29.9	6.4
Retained earnings	10,863.4	11,014.8
Accumulated other comprehensive income (loss)	(1,312.2)	(1,492.9)
Total Mosaic stockholders' equity	9,584.6	9,531.8
Non-controlling interests	37.9	33.2
Total equity	9,622.5	9,565.0
Total liabilities and equity	$16,840.7	$17,389.5

See Accompanying Notes to Consolidated Financial Statements

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Consolidated Statements of Cash Flows
In millions, except per share amounts

	Years Ended December 31,		
	2016	2015	2014
Cash Flows from Operating Activities			
Net earnings including noncontrolling interests	$301.2	$1,001.8	$1,030.4
Adjustments to reconcile net earnings including noncontrolling interests to net cash provided by operating activities:			
Depreciation, depletion and amortization	711.2	739.8	750.9
Deferred and other income taxes	(182.6)	47.4	(153.8)
Equity in net loss (earnings) of nonconsolidated companies, net of dividends	32.6	28.0	4.7
Accretion expense for asset retirement obligations	40.4	32.4	42.1
Share-based compensation expense	30.5	41.3	54.3
Loss on write-down of long-lived asset	43.5	7.9	—
Amortization of acquired inventory	—	—	49.0
Change in value of share repurchase agreement	—	—	60.2
Unrealized loss (gain) on derivatives	(70.1)	33.4	34.8
Carlsbad restructuring expense	—	—	125.4
(Gain) Loss on disposal of fixed assets	27.0	26.6	(9.2)
Other	18.2	12.9	3.7
Changes in assets and liabilities, net of acquisitions:			
Receivables, net	3.5	(60.7)	(226.5)
Inventories, net	263.0	(53.7)	(129.7)
Other current assets and noncurrent assets	245.7	(313.3)	457.7
Accounts payable and accrued liabilities	(243.9)	262.0	136.0
Other noncurrent liabilities	45.9	1.8	(107.9)
Net cash provided by operating activities	1,266.1	1,807.6	2,122.1
Cash Flows from Investing Activities			
Capital expenditures	(843.1)	(1,000.3)	(929.1)
Purchases of available-for-sale securities - restricted	(1,659.4)	—	—
Proceeds from sale of available-for-sale securities - restricted	1,029.3	—	—
Restricted cash	816.5	(637.0)	(9.5)
Proceeds from sale of businesses	—	—	81.4
Acquisition of businesses	—	—	(1,725.4)
Proceeds from adjustment to acquisition of business	—	47.9	—
Investments in nonconsolidated companies	(244.0)	(227.1)	(154.6)
Investments in consolidated affiliate	(169.0)	—	—
Return of investment from nonconsolidated companies	—	54.4	—
Other	20.2	13.7	(1.9)
Net cash (used in) investing activities	(1,049.5)	(1,748.4)	(2,739.1)
Cash Flows from Financing Activities			
Payments of short-term debt	(421.3)	(367.2)	(220.4)
Proceeds from issuance of short-term debt	397.0	379.7	200.2
Payments of structured accounts payable arrangements	(792.2)	(395.7)	(177.6)
Proceeds from structured accounts payable arrangements	433.6	635.2	349.2
Payments of long-term debt	(769.1)	(59.6)	(2.1)
Proceeds from issuance of long-term debt	720.0	4.7	812.0
Repurchases of stock	(75.0)	(709.5)	(2,755.3)
Cash dividends paid	(385.1)	(384.7)	(382.5)

Other	3.5	3.7	8.1
Net cash (used in) financing activities	(888.6)	(893.4)	(2,168.4)
Effect of exchange rate changes on cash	68.8	(264.1)	(133.1)
Net change in cash and cash equivalents	(603.2)	(1,098.3)	(2,918.5)
Cash and cash equivalents—beginning of period	1,276.3	2,374.6	5,293.1
Cash and cash equivalents—end of period	$673.1	$1,276.3	$2,374.6

See Accompanying Notes to Consolidated Financial Statements

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Consolidated Statements of Equity
In millions, except per share data

	Shares	Dollars					
		Mosaic Shareholders					
	Common Stock	Common Stock	Capital in Excess of Par Value	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Non-Controlling Interests	Total Equity
Balance as of December 31, 2013	425.9	$4.3	$ 1.6	$11,182.1	$ 114.3	$ 18.3	$11,320.6
Total comprehensive income (loss)	—	—	—	1,028.6	(588.0)	(0.2)	440.4
Stock option exercises	0.7	—	6.7	—	—	—	6.7
Stock based compensation	—	—	54.3	—	—	—	54.3
Forward contract and other repurchases of stock	(59.1)	(0.6)	(60.4)	(659.3)	—	—	(720.3)
Dividends ($1.00 per share)	—	—	—	(382.5)	—	—	(382.5)
Dividends for noncontrolling interests	—	—	—	—	—	(0.6)	(0.6)
Tax benefit related to share based compensation	—	—	2.0	—	—	—	2.0
Balance as of December 31, 2014	367.5	3.7	4.2	11,168.9	(473.7)	17.5	10,720.6
Total comprehensive income (loss)	—	—	—	1,000.4	(1,019.2)	(3.5)	(22.3)
Stock option exercises	0.6	—	5.3	—	—	—	5.3
Stock based compensation	—	—	27.9	—	—	—	27.9
Repurchases of stock	(15.6)	(0.2)	(30.2)	(667.9)	—	—	(698.3)
Dividends ($1.075 per share)	—	—	—	(486.6)	—	—	(486.6)
Dividends for noncontrolling interests	—	—	—	—	—	(0.8)	(0.8)
Equity from noncontrolling interests	—	—	—	—	—	20.0	20.0
Tax shortfall related to share based compensation	—	—	(0.8)	—	—	—	(0.8)
Balance as of December 31, 2015	352.5	3.5	6.4	11,014.8	(1,492.9)	33.2	9,565.0
Total comprehensive income (loss)	—	—	—	297.8	180.7	5.5	484.0
Stock option exercises	0.5	—	3.8	—	—	—	3.8
Stock based compensation	—	—	29.2	—	—	—	29.2
Repurchases of stock	(2.8)	—	(9.5)	(65.5)	—	—	(75.0)
Dividends ($1.10 per share)	—	—	—	(383.7)	—	—	(383.7)
Dividends for noncontrolling interests	—	—	—	—	—	(0.8)	(0.8)
Balance as of December 31, 2016	350.2	$3.5	$ 29.9	$10,863.4	$ (1,312.2)	$ 37.9	$9,622.5

See Accompanying Notes to Consolidated Financial Statements

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Notes to Consolidated Financial Statements
Tables in millions, except per share amounts

1. ORGANIZATION AND NATURE OF BUSINESS

The Mosaic Company (before or after the Cargill Transaction described in Note 18, “Mosaic”, and with its consolidated subsidiaries, “we”, “us”, “our”, or the “Company”) is the parent company of the business that was formed through the business combination (“Combination”) of IMC Global Inc. and the Cargill Crop Nutrition fertilizer businesses of Cargill, Incorporated and its subsidiaries (collectively, “Cargill”) on October 22, 2004.

We produce and market concentrated phosphate and potash crop nutrients. We conduct our business through wholly and majority owned subsidiaries as well as businesses in which we own less than a majority or a non-controlling interest, including consolidated variable interest entities and investments accounted for by the equity method.

In 2015, we realigned our business segments (the "Realignment") to more clearly reflect our evolving business model. Our international distribution activities, which had previously been reported in our Phosphates business segment, were moved into a separate International Distribution segment.

After the Realignment, we are organized into the following three business segments:

Our Phosphates business segment owns and operates mines and production facilities in Florida which produce concentrated phosphate crop nutrients and phosphate-based animal feed ingredients, and processing plants in Louisiana which produce concentrated phosphate crop nutrients. Included in the Phosphates segment is our 35% economic interest in a joint venture that owns the Miski Mayo Phosphate Mine in Peru and our 25% interest in the Ma'aden Wa'ad Al Shamal Phosphate Company (the "MWSPC"), a joint venture we formed with Saudi Arabian Mining Company (“Ma’aden”) and Saudi Basic Industries Corporation (“SABIC”) to develop, own and operate integrated phosphate production facilities in the Kingdom of Saudi Arabia. Once operational, we will market approximately 25% of the MWSPC production.

On March 17, 2014, we completed the acquisition of the Florida phosphate assets and assumption of certain related liabilities (the "CF Phosphate Assets Acquisition") of CF Industries, Inc. ("CF"). The purchase price was $1,172.1 million plus an additional $203.7 million (all in cash) to fund CF’s asset retirement obligation trust and escrow. We acquired CF's phosphate mining and production operations in Central Florida and terminal and warehouse facilities in Tampa, Florida. This acquisition allowed us to take advantage of synergies associated with combining our phosphate operations and logistical capabilities in Central Florida with those of CF. In addition, we were able to forego the construction of a beneficiation plant at Ona and the construction of a previously planned ammonia plant.

Our Potash business segment owns and operates potash mines and production facilities in Canada and the U.S. which produce potash-based crop nutrients, animal feed ingredients and industrial products. Potash sales include domestic and international sales. We are a member of Canpotex, Limited (“Canpotex”), an export association of Canadian potash producers through which we sell our Canadian potash outside the U.S. and Canada.

Our International Distribution business segment consists of sales offices, crop nutrient blending and bagging facilities, port terminals and warehouses in several key non-U.S. countries, including Brazil, Paraguay, India and China. We also have a single superphosphate plant in Brazil that produces crop nutrients by mixing sulfuric acid with phosphate rock. Our International Distribution segment serves as a distribution outlet for our Phosphates and Potash segments, but also purchases and markets products from other suppliers, generally to complement the sales of our production.

On December 17, 2014, we completed the acquisition of Archer Daniels Midland Company's ("ADM") fertilizer distribution business in Brazil and Paraguay (the "ADM Acquisition") for $301.7 million, including $47.9 million related to a reduction of the working capital acquired, which is reflected in our Consolidated Financial Statements in 2015. This acquisition is expected to significantly accelerate our previously announced growth plans in Brazil as well as replace a substantial amount of planned internal investments in that country. Under the terms of the agreements, we acquired four blending and warehousing facilities in Brazil, one in Paraguay and additional warehousing and logistics service capabilities. We expect this acquisition to increase our annual distribution in the region from approximately four million metric tonnes to about six million metric tonnes of crop nutrients. The parties have also entered into five-year fertilizer supply agreements providing for Mosaic to supply ADM’s fertilizer needs in Brazil and Paraguay.

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Intersegment eliminations, mark-to-market gains/losses on derivatives that had previously been reported in our Phosphates and Potash business segments prior to the Realignment, debt expenses, Streamsong Resort® results of operations and our legacy Argentina and Chile results are included within Corporate, Eliminations and Other.
See Note 25 of our Notes to Consolidated Financial Statements in this report for segment results, recast to reflect the Realignment. The recasting of previously issued financial information did not change our previously reported results of operations.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Statement Presentation and Basis of Consolidation

The accompanying Consolidated Financial Statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). Throughout the Notes to Consolidated Financial Statements, amounts in tables are in millions of dollars except for per share data and as otherwise designated.
The accompanying Consolidated Financial Statements include the accounts of Mosaic and its majority owned subsidiaries. Certain investments in companies where we do not have control but have the ability to exercise significant influence are accounted for by the equity method.

Accounting Estimates

Preparation of the Consolidated Financial Statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. The more significant estimates made by management relate to the recoverability of non-current assets including goodwill, the useful lives and net realizable values of long-lived assets, environmental and reclamation liabilities including asset retirement obligations ("AROs"), the costs of our employee benefit obligations for pension plans and postretirement benefits, income tax related accounts including the valuation allowance against deferred income tax assets, inventory valuation and accruals for pending legal and environmental matters. Actual results could differ from these estimates.

Revenue Recognition

Revenue on North American sales is recognized when the product is delivered to the customer and/or when the risks and rewards of ownership are otherwise transferred to the customer and when the price is fixed or determinable. Revenue on North American export sales is recognized upon the transfer of title to the customer and when the other revenue recognition criteria have been met, which generally occurs when product enters international waters. Revenue from sales originating outside of North America is recognized upon transfer of title to the customer based on contractual terms of each arrangement and when the other revenue recognition criteria have been met. Our products are generally sold based on the market prices prevailing at the time the sales contract is signed or through contracts which are priced at the time of shipment based on a formula. In certain circumstances, the final price of our products is determined after shipment based on the current market at the time the price is agreed to with the customer. In such circumstances, revenue is recognized when the final price is fixed and the other revenue recognition criteria have been met. Shipping and handling costs are included as a component of cost of goods sold.

Non-Income Taxes

We pay Canadian resource taxes consisting of the Potash Production Tax and resource surcharge. The Potash Production Tax is a Saskatchewan provincial tax on potash production and consists of a base payment and a profits tax. In addition to the Canadian resource taxes, royalties are payable to the mineral owners with respect to potash reserves or production of potash. These resource taxes and royalties are recorded in our cost of goods sold. Our Canadian resource tax and royalty expenses were $121.6 million, $281.2 million and $195.0 million during 2016, 2015 and 2014, respectively.
We have approximately $102 million of assets recorded as of December 31, 2016 related to PIS and Cofins, which is a Brazilian federal value-added tax, and income tax credits mostly earned in 2009 through 2015 that we believe will be realized through paying income taxes, paying other federal taxes, or receiving cash refunds. Should the Brazilian government determine that these are not valid credits upon audit, this could impact our results in such period. We have recorded the PIS

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and Cofins credits at amounts which are probable of collection. Information regarding PIS and Cofins taxes already audited is included in Note 21 of our Notes to Consolidated Financial Statements.

Foreign Currency Translation

The Company's reporting currency is the U.S. dollar; however, for operations located in Canada and Brazil, the functional currency is the local currency. Assets and liabilities of these foreign operations are translated to U.S. dollars at exchange rates in effect at the balance sheet date, while income statement accounts and cash flows are translated to U.S. dollars at the average exchange rates for the period. For these operations, translation gains and losses are recorded as a component of accumulated other comprehensive income in equity until the foreign entity is sold or liquidated. Transaction gains and losses result from transactions that are denominated in a currency other than the functional currency of the operation, primarily accounts receivable in our Canadian entities denominated in U.S. dollars, and accounts payable in Brazil denominated in U.S. dollars. These foreign currency transaction gains and losses are presented separately in the Consolidated Statement of Earnings.

Cash and Cash Equivalents

Cash and cash equivalents include short-term, highly liquid investments with original maturities of 90 days or less, and other highly liquid investments that are payable on demand such as money market accounts, certain certificates of deposit and repurchase agreements. The carrying amount of such cash equivalents approximates their fair value due to the short-term and highly liquid nature of these instruments.

Concentration of Credit Risk

In the U.S., we sell our products to manufacturers, distributors and retailers primarily in the Midwest and Southeast. Internationally, our potash products are sold primarily through Canpotex, an export association. A concentration of credit risk arises from our sales and accounts receivable associated with the international sales of potash product through Canpotex. We consider our concentration risk related to the Canpotex receivable to be mitigated by their credit policy which requires the underlying receivables to be substantially insured or secured by letters of credit. As of December 31, 2016 and 2015, $68.1 million and $59.3 million, respectively, of accounts receivable were due from Canpotex. During 2016, 2015, and 2014, sales to Canpotex were $604.5 million, $1.1 billion and $994.9 million, respectively.

Inventories

Inventories of raw materials, work-in-process products, finished goods and operating materials and supplies are stated at the lower of cost or net realizable value. Costs for substantially all inventories are determined using the weighted average cost basis. To determine the cost of inventory, we allocate fixed expense to the costs of production based on the normal capacity, which refers to a range of production levels and is considered the production expected to be achieved over a number of periods or seasons under normal circumstances, taking into account the loss of capacity resulting from planned maintenance.

Net realizable value of our inventory is defined as forecasted selling prices less reasonably predictable selling costs. Significant management judgment is involved in estimating forecasted selling prices including various demand and supply variables. Examples of demand variables include grain and oilseed prices, stock-to-use ratios and changes in inventories in the crop nutrients distribution channels. Examples of supply variables include forecasted prices of raw materials, such as phosphate rock, sulfur, ammonia, and natural gas, estimated operating rates and industry crop nutrient inventory levels. Results could differ materially if actual selling prices differ materially from forecasted selling prices. Charges for lower of cost or market are recognized in our Consolidated Statements of Earnings in the period when there is evidence of a decline of market value below cost.

Property, Plant and Equipment and Recoverability of Long-Lived Assets

Property, plant and equipment are stated at cost. Costs of significant assets include capitalized interest incurred during the construction and development period. Repairs and maintenance, including planned major maintenance and plant turnaround costs, are expensed when incurred.

Depletion expenses for mining operations, including mineral reserves, are generally determined using the units-of-production method based on estimates of recoverable reserves. Depreciation is computed principally using the straight-line method over

the following useful lives: machinery and equipment three to 25 years, and buildings and leasehold improvements three to 40 years.

We estimate initial useful lives based on experience and current technology. These estimates may be extended through sustaining capital programs. Factors affecting the fair value of our assets or periods of expected use may also affect the estimated useful lives of our assets and these factors can change. Therefore, we periodically review the estimated remaining lives of our facilities and other significant assets and adjust our depreciation rates prospectively where appropriate. We are in the process of changing to the units-of-production method of depreciation for certain assets and expect to complete our assessment and discuss the impacts in the first quarter of 2017.

Long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. The carrying amount of a long-lived asset group is not recoverable if it exceeds the sum of the undiscounted cash flows expected to result from the use and eventual disposition of the asset group. If it is determined that an impairment loss has occurred, the loss is measured as the amount by which the carrying amount of the long-lived asset group exceeds its fair value.

Leases

Leases in which the risk of ownership is retained by the lessor are classified as operating leases. Leases which substantially transfer all of the benefits and risks inherent in ownership to the lessee are classified as capital leases. Assets acquired under capital leases are depreciated on the same basis as property, plant and equipment. Rental payments are expensed on a straight-line basis. Leasehold improvements are depreciated over the depreciable lives of the corresponding fixed assets or the related lease term, whichever is shorter.

Structured Accounts Payable Arrangements

In Brazil, we finance some of our potash-based fertilizer and other raw material product purchases through third-party financing arrangements. These arrangements provide that the third-party intermediary advance the amount of the scheduled payment to the vendor, less an appropriate discount, at a scheduled payment date and Mosaic makes payment to the third-party intermediary at a later date, stipulated in accordance with the commercial terms negotiated. At December 31, 2016 and 2015, these structured accounts payable arrangements were $128.8 million and $481.7 million, respectively.

Contingencies

Accruals for environmental remediation efforts are recorded when costs are probable and can be reasonably estimated. In determining these accruals, we use the most current information available, including similar past experiences, available technology, consultant evaluations, regulations in effect, the timing of remediation and cost-sharing arrangements.

We are involved from time to time in claims and legal actions incidental to our operations, both as plaintiff and defendant. We have established what we currently believe to be adequate accruals for pending legal matters. These accruals are established as part of an ongoing worldwide assessment of claims and legal actions that takes into consideration such items as advice of legal counsel, individual developments in court proceedings, changes in the law, changes in business focus, changes in the litigation environment, changes in opponent strategy and tactics, new developments as a result of ongoing discovery, and past experience in defending and settling similar claims. The litigation accruals at any time reflect updated assessments of the then-existing claims and legal actions. The final outcome or potential settlement of litigation matters could differ materially from the accruals which we have established. Legal costs are expensed as incurred.

Pension and Other Postretirement Benefits

Mosaic offers a number of benefit plans that provide pension and other benefits to qualified employees. These plans include defined benefit pension plans, supplemental pension plans, defined contribution plans and other postretirement benefit plans.

We accrue the funded status of our plans, which is representative of our obligations under employee benefit plans and the related costs, net of plan assets measured at fair value. The cost of pensions and other retirement benefits earned by employees is generally determined with the assistance of an actuary using the projected benefit method prorated on service and management’s best estimate of expected plan investment performance, salary escalation, retirement ages of employees and expected healthcare costs.

Additional Accounting Policies

To facilitate a better understanding of our consolidated financial statements we have disclosed the following significant accounting policies (with the exception of those identified above) throughout the following notes, with the related financial disclosures by major caption:

3. RECENTLY ISSUED ACCOUNTING GUIDANCE

Recently Adopted Accounting Pronouncements

In April 2015, the Financial Accounting Standards Board ("FASB") issued guidance which requires debt issuance costs to be presented in the balance sheet as a direct deduction from the carrying amount of the associated debt liability, consistent with the presentation of a debt discount. In August 2015, the FASB issued additional guidance which clarified that an entity may defer and present debt issuance costs related to a line-of-credit arrangement as an asset and subsequently amortize those costs ratably over the term of the arrangement, regardless of whether there are any outstanding borrowings on it. This guidance became effective for us beginning January 1, 2016 and has been implemented retroactively. Accordingly, we reclassified $22.9 million of deferred financing fees against outstanding long-term debt accounts and $2.9 million of deferred financing fees related to our revolving credit facility remain recorded as an asset within the December 31, 2015 balance sheet.

In March 2016, the FASB issued guidance which simplifies several aspects of the accounting for share-based payment transactions, including certain income tax consequences, classifications on the statement of cash flows, and accounting for forfeitures. The guidance is effective for us beginning January 1, 2017, and early application is permitted. We adopted this standard effective January 1, 2016. The effect of this adoption was not significant to our consolidated balance sheets, statements of earnings or statements of cash flows.

Pronouncements Issued But Not Yet Adopted

In May 2014, the FASB issued guidance addressing how revenue is recognized from contracts with customers and related disclosures. This standard supersedes existing revenue recognition requirements and most industry-specific guidance. This standard was initially expected to be effective for us beginning January 1, 2017, and provides for either full retrospective adoption or a modified retrospective adoption by which the cumulative effect of the change is recognized in retained earnings at the date of initial application. In July 2015, the FASB approved the deferral of the effective date of this standard by one year by allowing for adoption either at January 1, 2017 or January 1, 2018. We intend to elect the deferred adoption date of January 1, 2018 and are modeling the transition alternatives, but have not finalized our decision regarding the method of implementation. We have reviewed our sales contracts and practices as compared to the new guidance and are working through implementation steps and continue to evaluate our procedural and related system requirements related to the provisions of this standard. In 2017, we will be rewriting our revenue recognition accounting policy and drafting new revenue disclosures to reflect the requirements of this standard. We are currently evaluating the impact that this guidance will have on our consolidated financial statements.

In January 2016, the FASB issued guidance which addresses certain aspects of recognition, measurement, presentation, and disclosure of financial instruments. This guidance is effective for us beginning January 1, 2018, and early adoption is not permitted. We are currently evaluating the impact that this guidance will have on our consolidated financial statements.

In February 2016, the FASB issued guidance which requires recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. This guidance is effective for us beginning January 1, 2019, with early adoption permitted. The provisions of this guidance are to be applied using a modified retrospective approach, which

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requires application of the guidance for all periods presented. We are currently gathering data for our lease arrangements and evaluating potential system changes to determine the impact this guidance will have on our consolidated financial statements.

4. OTHER FINANCIAL STATEMENT DATA

The following provides additional information concerning selected balance sheet accounts:

	December 31,	
(in millions)	2016	2015
Receivables		
Trade	$550.8	$572.7
Non-trade	79.7	108.2
	630.5	680.9
Less allowance for doubtful accounts	2.7	5.9
	$627.8	$675.0
Inventories		
Raw materials	$42.9	$68.1
Work in process	332.9	435.9
Finished goods	936.7	991.0
Operating materials and supplies	78.6	68.5
	$1,391.1	$1,563.5
Other current assets		
Final price deferred[(a)]	$31.6	$175.6
Income and other taxes receivable	146.3	249.4
Prepaid expenses	99.9	123.1
Other	87.9	80.5
	$365.7	$628.6
Other assets		
MRO inventory	$115.6	$118.1
Marketable securities held in trust - restricted[(b)]	611.0	—
Restricted cash[(b)]	31.3	851.4
Other	296.2	287.9
	$1,054.1	$1,257.4

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	December 31,	
(in millions)	2016	2015
Accrued liabilities		
Accrued dividends	$101.8	$104.4
Payroll and employee benefits	142.9	162.9
Asset retirement obligations	102.0	91.9
Customer prepayments	145.6	121.2
Future capital commitment	—	120.0
Other	345.0	377.1
	$837.3	$977.5
Other noncurrent liabilities		
Asset retirement obligations	$747.9	$749.7
Accrued pension and postretirement benefits	64.9	69.6
Unrecognized tax benefits	27.2	79.2
Other	112.9	132.1
	$952.9	$1,030.6

(a) Final price deferred is product that has shipped to customers, but the price has not yet been agreed upon. This has not been included in inventory as risk of loss has passed to our customers. Amounts in this account are based on inventoried cost.

(b) Included in restricted cash, as of December 31, 2015, was approximately $200 million that was released to us following our replacement of the financial assurance provided by this cash with a surety bond in 2016, and approximately $630 million that was placed in trust in August 2016, following the effectiveness of the consent decrees discussed under "EPA RCRA Initiative" in Note 13 of our Notes to Consolidated Financial Statements. The funds have been invested in marketable securities as discussed in Note 11 of our Consolidated Financial Statements.

Interest expense, net was comprised of the following in 2016, 2015 and 2014:

	Years Ended December 31,		
(in millions)	2016	2015	2014
Interest income	$28.2	$35.8	$21.3
Less interest expense	140.6	133.6	128.9
Interest expense, net	$(112.4)	$(97.8)	$(107.6)

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5. PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment consist of the following:

	December 31,	
(in millions)	2016	2015
Land	$237.3	$222.3
Mineral properties and rights	3,413.2	3,329.7
Buildings and leasehold improvements	2,302.8	2,100.5
Machinery and equipment	7,226.3	6,632.7
Construction in-progress	1,737.6	1,474.7
	14,917.2	13,759.9
Less: accumulated depreciation and depletion	5,718.7	5,038.9
	$9,198.5	$8,721.0

Depreciation and depletion expense was $703.8 million, $732.2 million and $750.9 million for 2016, 2015 and 2014, respectively. Capitalized interest on major construction projects was $38.5 million, $36.1 million and $34.0 million for 2016, 2015 and 2014.

6. EARNINGS PER SHARE

We use the two-class method to compute basic and diluted earnings per share ("EPS"). Earnings for the period are allocated pro-rata between the common shareholders and the participating securities. Our only participating securities were related to the Share Repurchase Agreements discussed in Note 18 of our Notes to Consolidated Financial Statements. The numerator for basic and diluted EPS is net earnings for common stockholders. The denominator for basic EPS is the weighted-average number of shares outstanding during the period. The denominator for diluted EPS also includes the weighted average number of additional common shares that would have been outstanding if the dilutive potential common shares had been issued, unless the shares are anti-dilutive, and excludes shares subject to forward contracts.

The following is a reconciliation of the numerator and denominator for the basic and diluted EPS computations:

	Years Ended December 31,		
(in millions)	2016	2015	2014
Net earnings attributed to Mosaic	$297.8	$1,000.4	$1,028.6
Undistributed earnings attributable to participating securities	—	—	(22.3)
Numerator for basic and diluted earnings available to common stockholders	$297.8	$1,000.4	$1,006.3
Basic weighted average number of shares outstanding	350.4	358.5	382.4
Shares subject to forward contract	—	—	(8.3)
Basic weighted average number of shares outstanding attributable to common stockholders	350.4	358.5	374.1
Dilutive impact of share-based awards	1.3	1.8	1.5
Diluted weighted average number of shares outstanding	351.7	360.3	375.6
Basic net earnings per share	$0.85	$2.79	$2.69
Diluted net earnings per share	$0.85	$2.78	$2.68

A total of 3.0 million shares for 2016, 2.2 million shares for 2015, and 2.1 million shares for 2014 of common stock subject to issuance upon exercise of stock awards have been excluded from the calculation of diluted EPS because the effect would be anti-dilutive.

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7. CASH FLOW INFORMATION

Supplemental disclosures of cash paid for interest and income taxes and non-cash investing and financing information is as follows:

(in millions)	Years Ended December 31, 2016	2015	2014
Cash paid (received) during the period for:			
Interest	$163.0	$162.3	$155.9
Less amount capitalized	38.5	36.1	34.0
Cash interest, net	$124.5	$126.2	$121.9
Income taxes	$(65.4)	$193.3	$113.2

Acquiring or constructing property, plant and equipment by incurring a liability does not result in a cash outflow for us until the liability is paid. In the period the liability is incurred, the change in operating accounts payable on the Consolidated Statements of Cash Flows is adjusted by such amount. In the period the liability is paid, the amount is reflected as a cash outflow from investing activities. The applicable net change in operating accounts payable that was classified to investing activities on the Consolidated Statements of Cash Flows was $43.7 million, $(21.9) million and $29.3 million for 2016, 2015, and 2014 respectively.

We accrued $96.3 million related to the dividends declared in December 2016 that will be paid in the first quarter of 2017.

In September 2014, we accrued $120 million representing the remaining liability for our portion of mineral rights value transferred to MWSPC from Ma’aden. The offset to this liability was recorded as an investment in nonconsolidated companies. This amount was paid in 2016.

Depreciation, depletion and amortization includes $703.8 million and $732.2 million related to depreciation and depletion of property, plant and equipment, and $7.4 million and $7.6 million related to amortization of intangible assets for 2016 and 2015, respectively.

8. INVESTMENTS IN NON-CONSOLIDATED COMPANIES

We have investments in various international and domestic entities and ventures. The equity method of accounting is applied to such investments when the ownership structure prevents us from exercising a controlling influence over operating and financial policies of the businesses but still allow us to have significant influence. Under this method, our equity in the net earnings or losses of the investments is reflected as equity in net earnings of non-consolidated companies on our Consolidated Statements of Earnings. The effects of material intercompany transactions with these equity method investments are eliminated, including the gross profit on sales to and purchases from our equity-method investments which is deferred until the time of sale to the final third party customer. The cash flow presentation of dividends received from equity method investees is determined by evaluation of the facts, circumstances and nature of the distribution.

A summary of our equity-method investments, which were in operation as of December 31, 2016, is as follows:

Entity	Economic Interest
Gulf Sulphur Services LTD., LLLP	50.0 %
River Bend Ag, LLC	50.0 %
IFC S.A.	45.0 %
Miski Mayo Mine	35.0 %
MWSPC	25.0 %
Canpotex	38.1 %

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The summarized financial information shown below includes all non-consolidated companies carried on the equity method.

	Years Ended December 31,		
(in millions)	2016	2015	2014
Net sales	$2,307.9	$3,787.4	$3,814.1
Net earnings	11.9	30.2	20.0
Mosaic's share of equity in net earnings (loss)	(15.4)	(2.4)	(2.2)
Total assets	8,665.4	6,745.4	4,344.9
Total liabilities	6,310.1	4,698.6	3,107.0
Mosaic's share of equity in net assets	651.5	589.3	394.0

The difference between our share of equity in net assets as shown in the above table and the investment in non-consolidated companies as shown on the Consolidated Balance Sheets is due to an excess amount paid over the book value of the Miski Mayo Mine. The excess relates to phosphate rock reserves adjusted to fair value in relation to the Miski Mayo Mine. The excess amount is amortized over the estimated life of the phosphate rock reserves and is net of related deferred income taxes. On July 1, 2016, we made an equity contribution of $120 million to MWSPC representing the remaining liability for our portion of mineral rights value transferred to MWSPC from Ma'aden. As of December 31, 2016, MWSPC represented 82% of the total assets and 83% of the total liabilities in the table above. Their earnings were immaterial for the periods above.

MWSPC is developing a mine and two chemical complexes that are presently expected to produce phosphate fertilizers and other downstream phosphates products in the Kingdom of Saudi Arabia. We currently estimate that the cost to develop and construct the integrated phosphate production facilities (the "Project") will approximate $8.0 billion, which we expect to be funded primarily through investments by us, Ma'aden and SABIC (together, the "Project Investors"), and through borrowing arrangements and other external project financing facilities ("Funding Facilities"). The production facilities are expected to have a capacity of approximately 3.5 million tonnes of finished product per year. Ammonia operations commenced in late 2016 and production of finished phosphate products is expected to begin in 2017. We will market approximately 25% of the production of the joint venture.

On June 30, 2014, MWSPC entered into Funding Facilities with a consortium of 20 financial institutions for a total amount of approximately $5.0 billion.

Also on June 30, 2014, in support of the Funding Facilities, we, together with Ma'aden and SABIC, agreed to provide our respective proportionate shares of the funding necessary for MWSPC by:

(a) Contributing equity or making shareholder subordinated loans of up to $2.4 billion to fund project costs to complete and commission the Project (the “Equity Commitments”).

(b) Through the earlier of Project completion or June 30, 2020, contributing equity, making shareholder subordinated loans or providing bank subordinated loans, to fund cost overruns on the Project (the “Additional Cost Overrun Commitment”).

(c) Through the earlier of Project completion or June 30, 2020, contributing equity, making shareholder loans or providing bank subordinated loans to fund scheduled debt service (excluding accelerated amounts) payable under the Funding Facilities and certain other amounts (such commitment, the “DSU Commitment” and such scheduled debt service and other amounts, “Scheduled Debt Service”). Our proportionate share of amounts covered by the DSU Commitment is not anticipated to exceed approximately $200 million. The fair value of the DSU Commitment at December 31, 2016 is not material.

(d) To the extent that MWSPC has not received payment of certain governmental funding that has been allocated for the development of infrastructure assets to be utilized for the Project in an agreed minimum amount (currently at least $404 million), and by an agreed target date (currently June 30, 2017), providing subordinated bridge loans to MWSPC (the “IFA Bridge Loan”).

(e) From the earlier of the Project completion date or June 30, 2020, to the extent there is a shortfall in the amounts available to pay Scheduled Debt Service, depositing for the payment of Scheduled Debt Service an amount up to the respective amount of certain shareholder tax amounts, and severance fees under

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MWSPC's mining license, paid within the prior 36 months by MWSPC on behalf of the Project Investors, if any.
We, together with Ma'aden and SABIC, also agreed that to the extent MWSPC does not obtain certain planned Funding Facilities (the “Future Funding Facilities”) in the amount of approximately $560 million aggregate principal amount within an agreed time frame, currently by April 30, 2017, then we, together with Ma'aden and SABIC, would either arrange for other Future Funding Facilities or provide funding in the form of financial indebtedness to MWSPC in the amount of our respective proportionate shares of the shortfall. MWSPC has received approval from the Saudi Industrial Development Fund ("SIDF") for loans in the total amount of approximately $1.1 billion for the Project, subject to the finalization of definitive agreements. We currently expect that MWSPC will finalize definitive agreements with SIDF for loans (the "SIDF Loans") in the lower amount of approximately $560 million by April 30, 2017. We also anticipate that, in connection with the SIDF Loan facility, we and MWSPC will undertake obligations in addition to the current Equity Commitments, the Additional Cost Overrun Commitment, the DSU Commitment and the IFA Bridge Loan, including a guarantee by us in the amount of our proportionate share of the SIDF Loans (expected to be approximately $140 million).
We currently estimate that our cash investment in the Project, including our share of the Equity Commitments, our payments for mineral rights, and the amount we have invested to date, will approximate $850 million. As of December 31, 2016, our investment was $707 million. We expect our future cash contributions to be $143 million. No other commitments are included in this estimate.

9. GOODWILL

Goodwill is carried at cost, not amortized, and represents the excess of the purchase price and related costs over the fair value assigned to the net identifiable assets of a business acquired. We test goodwill for impairment on a quantitative basis at the reporting unit level on an annual basis or upon the occurrence of events that may indicate possible impairment. The test resulted in no impairment in the periods presented. As of the date of our annual impairment test, we had approximately 24%, 33% and 41% of excess fair value in our Phosphates, Potash and International Distribution reporting segments, respectively.
The changes in the carrying amount of goodwill, by reporting unit, as of December 31, 2016 and 2015, are as follows:

(in millions)	Phosphates	Potash	International Distribution	Total
Balance as of December 31, 2014	$ 648.4	$1,158.1	$ —	$1,806.5
Foreign currency translation	—	(173.4)	(15.9)	(189.3)
Allocation of goodwill due to Realignment	(156.0)	—	156.0	—
Adjustment to ADM purchase accounting	—	—	(21.9)	(21.9)
Balance as of December 31, 2015	492.4	984.7	118.2	1,595.3
Foreign currency translation	—	28.9	6.7	35.6
Balance as of December 31, 2016	$ 492.4	$1,013.6	$ 124.9	$1,630.9

As of December 31, 2016, $254.4 million of goodwill was tax deductible.

10. FINANCING ARRANGEMENTS

Mosaic Credit Facility

On November 18, 2016, we entered into a new unsecured five-year credit facility of up to $2.72 billion (the "Mosaic Credit Facility"), comprised of a $2.0 billion revolving facility and a $720 million term loan facility (the "Term Loan Facility"), which is intended to serve as our primary senior unsecured bank credit facility. The Mosaic Credit Facility increased and extended our prior unsecured credit facility entered into on December 5, 2013, consisting of a revolving facility of up to $1.5 billion (the "Prior Credit Facility") that was terminated contemporaneously with our entry into the Mosaic Credit Facility. Letters of credit outstanding under the Prior Credit Facility in the amount of approximately $18.3 million became letters of credit under the Mosaic Credit Facility. The term loan facility under the Mosaic Credit Facility is described below under "Long-Term Debt, including Current Maturities." The maturity date of the Mosaic Credit Facility, including final maturity of the term loan thereunder, is November 18, 2021.

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The Mosaic Credit Facility has cross-default provisions that, in general, provide that a failure to pay principal or interest under any one item of other indebtedness in excess of $50 million or $75 million for multiple items of other indebtedness, or breach or default under such indebtedness that permits the holders thereof to accelerate the maturity thereof, will result in a cross-default.
The Mosaic Credit Facility requires Mosaic to maintain certain financial ratios, including a ratio of Consolidated Indebtedness to Consolidated Capitalization Ratio (as defined) of no greater than 0.65 to 1.0 as well as a minimum Interest Coverage Ratio (as defined) of not less than 3.0 to 1.0.
The Mosaic Credit Facility also contains other events of default and covenants that limit various matters. These provisions include limitations on indebtedness, liens, investments and acquisitions (other than capital expenditures), certain mergers, certain sales of assets and other matters customary for credit facilities of this nature.
As of December 31, 2016 and 2015, we had outstanding letters of credit that utilized a portion of the amount available for revolving loans under the Mosaic Credit Facility of $15.7 million, and under the Prior Credit Facility of $18.7 million, respectively. The net available borrowings for revolving loans under the Mosaic Credit Facility as of December 31, 2016 were approximately $1,984.3 million, and under the Prior Credit Facility as of December 31, 2015 were approximately $1,481.3 million. Unused commitment fees under the Mosaic Credit Facility and Prior Credit Facility accrued at an average annual rate of 0.128% for 2016, and 0.125% for 2015 and 2014, generating expenses of $2.0 million, $1.9 million and $1.9 million, respectively.
Short-Term Debt
Short-term debt consists of the revolving credit facility under the Mosaic Credit Facility, under which there were no borrowings as of December 31, 2016, and various other short-term borrowings related to our international distribution activities. These other short-term borrowings outstanding were $0.1 million as of December 31, 2016. There were no borrowings under the Prior Credit Facility as of December 31, 2015.
We had additional outstanding bilateral letters of credit of $5.3 million as of December 31, 2016.
Long-Term Debt, including Current Maturities
The Mosaic Credit Facility includes our Term Loan Facility, which replaces a prior unsecured term loan facility entered into on March 20, 2014 under which Mosaic previously borrowed an aggregate of $800 million in term loans, including $370 million in Term A-1 Loans with a final maturity date of September 18, 2017 and $430 million in Term A-2 Loans with a final maturity date of September 18, 2019 (the "Prior Term Loan Facility"). An aggregate of $720 million of Term A-1 Loans and Term A-2 Loans was outstanding on November 18, 2016 (the "Effective Date"). Mosaic borrowed the entire amount available under the Term Loan Facility on the Effective Date and the proceeds (the "Term Loan") were used to prepay in full, without premium or penalty, the Prior Term Loan Facility.
Mosaic is required to repay 5.0% of the Term Loan amount the first two anniversaries of the Effective Date, 7.5% on the third anniversary of the Effective Date, and 10.0% on the fourth anniversary of the Effective Date. The final maturity of the Term Loan Facility is November 18, 2021. Mosaic may prepay its outstanding Term Loan Facility at any time and from time to time, without premium or penalty.
We have senior notes outstanding, consisting of $900 million aggregate principal amount of 4.25% senior notes due 2023, $500 million aggregate principal amount of 5.45% senior notes due 2033, and $600 million aggregate principal amount of 5.625% senior notes due 2043 (collectively, the “Senior Notes of 2013”).
We have additional senior notes outstanding, consisting of $450 million aggregate principal amount of 3.750% senior notes due 2021 and $300 million aggregate principal amount of 4.875% senior notes due 2041 (collectively, the “Senior Notes of 2011”).
The Senior Notes of 2011 and the Senior Notes of 2013 are Mosaic’s senior unsecured obligations and rank equally in right of payment with Mosaic’s existing and future senior unsecured indebtedness. The indenture governing the Senior Notes of 2011 and the Senior Notes of 2013 contains restrictive covenants limiting debt secured by liens, sale and leaseback transactions and mergers, consolidations and sales of substantially all assets, as well as other events of default.
Two debentures issued by Mosaic Global Holdings, Inc., one of our consolidated subsidiaries, the first due in 2018 (the “2018 Debentures”) and the second due in 2028 (the “2028 Debentures”), remain outstanding with balances of $89.0 million and

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$147.1 million, respectively, as of December 31, 2016. The indentures governing the 2018 Debentures and the 2028 Debentures also contain restrictive covenants limiting debt secured by liens, sale and leaseback transactions and mergers, consolidations and sales of substantially all assets, as well as events of default. The obligations under the 2018 Debentures and the 2028 Debentures are guaranteed by the Company and several of its subsidiaries.
During 2015, we funded the redemption of the remaining aggregate principal amount then outstanding of certain industrial revenue bonds.
Long-term debt primarily consists of term loans, secured notes, unsecured notes, unsecured debentures and capital leases. Long-term debt as of December 31, 2016 and 2015, respectively, consisted of the following:

(in millions)	December 31, 2016 Stated Interest Rate	December 31, 2016 Effective Interest Rate	Maturity Date	December 31, 2016 Stated Value	Combination Fair Market Value Adjustment	Discount on Notes Issuance	December 31, 2016 Carrying Value	December 31, 2015 Stated Value	Combination Fair Market Value Adjustment	Discount on Notes Issuance	December 31, 2015 Carrying Value
Unsecured notes	3.75% - 5.63%	4.73%	2021-2043	2,750.0	—	(8.0)	2,742.0	2,750.0	—	(9.1)	2,740.9
Unsecured debentures	7.30% - 7.38%	7.08%	2018-2028	236.1	1.9	—	238.0	236.1	2.4	—	238.5
Term loan	Libor plus 1.25%	Variable	2021	720.0	—	—	720.0	760.0	—	—	760.0
Capital leases	3.03% - 4.83%	3.52%	2019-2030	65.7	—	—	65.7	19.8	—	—	19.8
Consolidated related party debt(a)	Libor plus 1.125%	Variable	2017 (c)	53.7	—	—	53.7	53.6	—	—	53.6
Other(b)	2.50% - 9.00%	4.70%	2017-2023	(1.3)	—	—	(1.3)	(1.6)	—	—	(1.6)
Total long-term debt				3,824.2	1.9	(8.0)	3,818.1	3,817.9	2.4	(9.1)	3,811.2
Less current portion				39.3	0.5	(1.0)	38.8	42.3	0.4	(1.0)	41.7
Total long-term debt, less current maturities				$3,784.9	$1.4	$(7.0)	$3,779.3	$3,775.6	$2.0	$(8.1)	$3,769.5

(a) For further discussion of this transaction, see Note 16 of our Notes to Consolidated Financial Statements.
(b) Includes deferred financing fees related to our long term debt retroactively reclassified to 2015. For further discussion, see Note 3 of our Notes to Consolidated Financial Statements.
(c) Debt expected to be refinanced during 2017.

Scheduled maturities of long-term debt are as follows for the periods ending December 31:

(in millions)	
2017	$38.8
2018	128.8
2019	60.0
2020	74.5
2021	974.8
Thereafter	2,541.2
Total	$3,818.1

11. Marketable Securities Held in Trusts

In August 2016, Mosaic deposited $630 million into two trust funds (together, the "RCRA Trusts") created to provide additional financial assurance for the estimated costs ("Gypstack Closure Costs") of closure and long-term care of our Florida and Louisiana phosphogypsum management systems ("Gypstacks"), as described further in Note 13 of our

Notes to Consolidated Financial Statements. Our actual Gypstack Closure Costs are generally expected to be paid by us in the normal course of our Phosphates business; however, funds held in each of the RCRA Trusts can be drawn by the applicable governmental authority in the event we cannot perform our closure and long term care obligations. If and when our estimated

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Gypstack Closure Costs with respect to the facilities associated with a RCRA Trust are sufficiently lower than the amount on deposit in that RCRA Trust, we have the right to request that the excess funds be released to us. The same is true for the RCRA Trust balance remaining after the completion of our obligations, which will be performed over a period that may not end until three decades or more after a Gypstack has been closed. The investments held by the RCRA Trusts are managed by independent investment managers with discretion to buy, sell, and invest pursuant to the objectives and standards set forth in the related trust agreements.

The RCRA Trusts hold investments, which are restricted from our general use, in marketable debt securities classified as available-for-sale and are carried at fair value. As a result, unrealized gains and losses are included in other comprehensive income until realized, unless it is determined that the carrying value of an investment is impaired on an other-than-temporary basis. There were no other-than-temporary impairment write-downs on available-for-sale securities during 2016.

We review the fair value hierarchy classification on a quarterly basis. Changes in the ability to observe valuation inputs may result in a reclassification of levels for certain securities within the fair value hierarchy. We determine the fair market values of our available-for-sale securities and certain other assets based on the fair value hierarchy described below:

Level 1: Values based on unadjusted quoted prices in active markets that are accessible at the measurement date for identical assets or liabilities.

Level 2: Values based on quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, or model-based valuation techniques for which all significant assumptions are observable in the market.

Level 3: Values generated from model-based techniques that use significant assumptions not observable in the market. These unobservable assumptions reflect our own estimates of assumptions that market participants would use in pricing the asset or liability. Valuation techniques include use of option pricing models, discounted cash flow models and similar techniques.

The estimated fair value of the investments in the RCRA Trusts is as follows:

	December 31, 2016			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Level 1				
Cash and cash equivalents	$1.2	$ —	$ —	$1.2
Level 2				
Corporate debt securities	180.2	—	(4.3)	175.9
Municipal bonds	180.9	—	(6.6)	174.3
U.S. government bonds	257.4	0.1	(0.3)	257.2
Total	$619.7	$ 0.1	$ (11.2)	$608.6

There were no investments in available-for-sale securities as of December 31, 2015.

The following table shows the gross unrealized losses and fair values of the RCRA Trusts' available-for-sale securities that have been in a continuous unrealized loss position deemed to be temporary as of December 31, 2016.

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	December 31, 2016	
	Less than 12 months	
	Fair Value	Gross Unrealized Losses
Corporate debt securities	$163.7	$ (4.3)
Municipal bonds	162.7	(6.6)
U.S. government bonds	202.3	(0.3)
Total	$528.7	$ (11.2)

The following table summarizes the balance by contractual maturity of the available-for-sale debt securities invested by the RCRA Trusts as of December 31, 2016. Actual maturities may differ from contractual maturities because the issuers of the securities may have the right to prepay obligations before the underlying contracts mature.

	December 31, 2016
Due in one year or less	$ 20.7
Due after one year through five years	364.8
Due after five years through ten years	163.1
Due after ten years	58.8
Total debt securities	$ 607.4

Realized losses and gains, which were determined on a specific identification basis, were $10.5 million and $0.2 million for the twelve months ended December 31, 2016, respectively.

12. INCOME TAXES

In preparing our Consolidated Financial Statements, we utilize the asset and liability approach in accounting for income taxes. We recognize income taxes in each of the jurisdictions in which we have a presence. For each jurisdiction, we estimate the actual amount of income taxes currently payable or receivable, as well as deferred income tax assets and liabilities attributable to temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred income tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which these temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

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The provision for income taxes for 2016, 2015 and 2014, consisted of the following:

(in millions)	Years Ended December 31, 2016	2015	2014
Current:			
Federal	$(41.7)	$61.9	$46.0
State	(15.9)	7.1	11.8
Non-U.S.	94.9	(26.5)	265.4
Total current	37.3	42.5	323.2
Deferred:			
Federal	(147.9)	(38.0)	(103.6)
State	3.9	(19.5)	(16.4)
Non-U.S.	32.5	114.1	(18.5)
Total deferred	(111.5)	56.6	(138.5)
(Benefit from) provision for income taxes	$(74.2)	$99.1	$184.7

The components of earnings from consolidated companies before income taxes, and the effects of significant adjustments to tax computed at the federal statutory rate, were as follows:

(in millions)	Years Ended December 31, 2016	2015	2014
United States earnings (loss)	$(96.4)	$676.0	$312.9
Non-U.S. earnings	338.8	427.3	904.4
Earnings from consolidated companies before income taxes	$242.4	$1,103.3	$1,217.3
Computed tax at the U.S. federal statutory rate of 35%	35.0 %	35.0 %	35.0 %
State and local income taxes, net of federal income tax benefit	(6.1)%	(0.5)%	0.1 %
Percentage depletion in excess of basis	(34.4)%	(11.0)%	(9.7)%
Impact of non-U.S. earnings	(4.0)%	(13.6)%	(3.8)%
Non-taxable change in value of share repurchase agreement	— %	— %	1.7 %
Change in valuation allowance	7.7 %	(0.1)%	(7.6)%
Resolution of uncertain tax positions	(34.9)%	— %	— %
Share-based excess cost/(benefits)	2.2 %	— %	— %
Other items (none in excess of 5% of computed tax)	3.9 %	(0.8)%	(0.5)%
Effective tax rate	(30.6)%	9.0 %	15.2 %

In the year ended December 31, 2016, tax expense specific to the period included a benefit of $54.2 million, which includes a domestic benefit of $85.8 million related to the resolution of an Advanced Pricing Agreement, which is a tax treaty-based process, partially offset by a $23.3 million expense related to distributions from certain non-U.S. subsidiaries and $8.3 million of expense primarily related to share-based excess cost.

During 2016, our income tax rate was favorably impacted by the mix of earnings across the jurisdictions in which we operate and by a benefit associated with depletion when compared to the year ended December 31, 2015. Our income tax rate is lower in 2016 compared to 2015 because our deductions are relatively fixed in dollars, while our profitability has been reduced; therefore, the deductions are a larger percentage of income.

In the year ended December 31, 2015, the impact of non-U.S. earnings reflects a rate differential on our non-U.S. subsidiaries and foreign tax credits for various taxes incurred by certain entities that are taxed in both their local currency jurisdiction and

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the U.S. The impact of non-U.S. earnings also includes a benefit specific to the period of $28.2 million, which consists of a benefit of $14.5 million primarily related to changes in estimates associated with an Advanced Pricing Agreement, which is a tax treaty-based process, a benefit of $6.2 million related to losses on the sale of our distribution business in Chile and the reduction in the tax rate for one of our equity method investments that resulted in a benefit of $7.5 million. State and local income taxes includes a benefit of $18.4 million related to the resolution of certain state tax matters.

In the year ended December 31, 2014, the impact of non-U.S. earnings included a cost of $81.0 million related to certain non-U.S. subsidiaries where our earnings were not permanently re-invested, a deferred tax benefit of $47.0 million related to a change in the tax status of a Brazilian subsidiary and a benefit of $8.1 million related to the settlement of certain non-U.S. tax matters. The non-U.S. earnings are also impacted by the mix of earnings across the jurisdictions in which we operate. In addition, the effective rate reflects decreases of $32.8 million related to the release of valuation allowances related to net operating losses and other deferred tax assets at a Brazilian subsidiary, and $53.6 million related to losses on the sale of our distribution business in Argentina, which are both reflected in the change in valuation allowance above.

Significant components of our deferred tax liabilities and assets as of December 31 were as follows:

	December 31,	
(in millions)	2016	2015
Deferred tax liabilities:		
Depreciation and amortization	$960.5	$870.4
Depletion	336.7	329.9
Partnership tax basis differences	111.0	118.5
Undistributed earnings of non-U.S. subsidiaries	213.8	217.8
Other liabilities	47.1	56.6
Total deferred tax liabilities	$1,669.1	$1,593.2
Deferred tax assets:		
Alternative minimum tax credit carryforwards	$244.7	$202.5
Capital loss carryforwards	6.3	2.7
Foreign tax credit carryforwards	525.6	265.5
Net operating loss carryforwards	204.3	67.4
Pension plans and other benefits	15.4	18.3
Asset retirement obligations	256.2	254.5
Deferred revenue	—	192.6
Other assets	274.4	316.0
Subtotal	1,526.9	1,319.5
Valuation allowance	30.6	11.9
Net deferred tax assets	1,496.3	1,307.6
Net deferred tax liabilities	$(172.8)	$(285.6)

We have certain entities that are taxed in both their local currency jurisdiction and the U.S. As a result, we have deferred tax balances for both jurisdictions. As of December 31, 2016 and 2015, these non-U.S. deferred taxes are offset by approximately $410.1 million and $409.4 million, respectively, of anticipated foreign tax credits included within our depreciation and depletion components of deferred tax liabilities above.

As of December 31, 2016, we had estimated carryforwards for tax purposes as follows: alternative minimum tax credits of $244.7 million, net operating losses of $589.2 million and foreign tax credits of $525.6 million. These carryforward benefits may be subject to limitations imposed by the Internal Revenue Code, and in certain cases, provisions of foreign law. The alternative minimum tax credit carryforwards can be carried forward indefinitely. Approximately $213 million of our net operating loss carryforwards relate to Brazil and can be carried forward indefinitely but are limited to 30 percent of taxable income each year. The majority of the remaining net operating loss carryforwards relate to the U.S. and can be carried forward for 20 years. Of the $525.6 million of foreign tax credits, approximately $175.4 million have an expiration date of 2018 and approximately $85.8 million have an expiration date of 2023. The remaining foreign tax credits have an expiration

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date of 2026. The realization of our foreign tax credit carryforwards is dependent on market conditions, repatriation of the undistributed earnings of certain non-U.S. subsidiaries, tax law changes, and other business outcomes. We will need certain types of taxable income totaling approximately $1.5 billion in the U.S. between 2016 and 2026 to fully utilize our foreign tax credit carryforwards, of which $500 million must be earned by 2018.

We have no intention of remitting certain undistributed earnings of non-U.S. subsidiaries aggregating $0.2 billion as of December 31, 2016, and accordingly, no deferred tax liability has been established relative to these earnings. Generally, such amounts become subject to U.S. taxation upon the remittance of dividends and under certain other circumstances. The calculation of the unrecognized deferred tax liability related to these earnings is complex and is not practicable.

Valuation Allowance

In assessing the need for a valuation allowance, we consider whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. We evaluate our ability to realize the tax benefits associated with deferred tax assets by analyzing the relative impact of all the available positive and negative evidence regarding our forecasted taxable income using both historical and projected future operating results, the reversal of existing taxable temporary differences, taxable income in prior carry-back years (if permitted) and the availability of tax planning strategies. The ultimate realization of deferred tax assets is dependent upon the generation of certain types of future taxable income during the periods in which those temporary differences become deductible. In making this assessment, we consider the scheduled reversal of deferred tax liabilities, our ability to carry back the deferred tax asset, projected future taxable income, and tax planning strategies. A valuation allowance will be recorded in each jurisdiction in which a deferred income tax asset is recorded when it is more likely than not that the deferred income tax asset will not be realized. Changes in deferred tax asset valuation allowances typically impact income tax expense.

For the year ended December 31, 2016, the valuation allowance increased by $18.7 million primarily due to the conclusion we are not more likely than not to use attributes at a Netherlands subsidiary and certain U.S. states.

For the year ended year ended December 31, 2015, the valuation allowance decreased $16.4 million primarily due to the sale of the Chile distribution business.

Prior to the year ended December 31, 2014, we had provided a valuation allowance for deferred tax assets primarily related to net operating losses at certain non-U.S. subsidiaries. As of December 31, 2014, we determined that sufficient positive evidence existed to conclude it was more likely than not that we would realize the benefits of the net operating loss and other deferred tax assets at a Brazilian subsidiary for which a valuation allowance had been recorded. We also concluded that it was more likely than not that we would realize the benefits related to losses on the sale of a distribution business in a non-U.S. subsidiary. Accordingly, during the year ended December 31, 2014, the valuation allowance decreased $100.9 million primarily related to these two items.

Uncertain Tax Positions

Accounting for uncertain income tax positions is determined by prescribing a minimum probability threshold that a tax position must meet before a financial statement benefit is recognized. This minimum threshold is that a tax position is more likely than not to be sustained upon examination by the applicable taxing authority, including resolution of any related appeals or litigation processes, based on the technical merits of the position. The tax benefit to be recognized is measured as the largest amount of benefit that is greater than a fifty percent likelihood of being realized upon ultimate settlement.

As of December 31, 2016, we had $27.1 million of gross uncertain tax positions. If recognized, the benefit to our effective tax rate in future periods would be approximately $12.0 million of that amount. During 2016, we recorded a domestic benefit of $85.8 million related to the resolution of an Advanced Pricing Agreement, which is a tax treaty-based process, which was included in the amount of gross decreases related to the prior period tax positions of $91.6 million. We also recorded gross increases in our uncertain tax positions of $20.4 million related to certain non-U.S. tax matters, of which $5.0 million impacted the effective tax rate. This increase was offset by items not included in gross uncertain tax positions.

Based upon the information available as of December 31, 2016, it is reasonably possible that the amount of unrecognized tax benefits will change in the next twelve months; however, the change cannot reasonably be estimated.

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	Years Ended December 31,		
(in millions)	2016	2015	2014
Gross unrecognized tax benefits, beginning of period	$98.6	$100.6	$99.2
Gross increases:			
Prior period tax positions	13.5	18.4	33.0
Current period tax positions	6.9	1.1	2.8
Gross decreases:			
Prior period tax positions	(91.6)	(20.2)	—
Settlements	—	—	(32.6)
Currency translation	(0.3)	(1.3)	(1.8)
Gross unrecognized tax benefits, end of period	$27.1	$98.6	$100.6

We recognize interest and penalties related to unrecognized tax benefits as a component of our income tax expense. Interest and penalties accrued in our Consolidated Balance Sheets as of December 31, 2016 and 2015 are $3.2 million and $17.1 million, respectively, and are included in other noncurrent liabilities in the Consolidated Balance Sheets.

We operate in multiple tax jurisdictions, both within the United States and outside the United States, and face audits from various tax authorities regarding transfer pricing, deductibility of certain expenses, and intercompany transactions, as well as other matters. With few exceptions, we are no longer subject to examination for tax years prior to 2010.

We are currently under audit by the U.S. Internal Revenue Service for tax years ended May 31, 2013 and December 31, 2013 and by the Canada Revenue Agency for tax years ended May 31, 2013 and December 31, 2013. Based on the information available, we do not anticipate significant changes to our unrecognized tax benefits as a result of these examinations other than the amounts discussed above.

13. ACCOUNTING FOR ASSET RETIREMENT OBLIGATIONS

We recognize our estimated asset retirement obligations ("AROs") in the period in which we have an existing legal obligation associated with the retirement of a tangible long-lived asset, and the amount of the liability can be reasonably estimated. The ARO is recognized at fair value when the liability is incurred with a corresponding increase in the carrying amount of the related long lived asset. We depreciate the tangible asset over its estimated useful life. The liability is adjusted in subsequent periods through accretion expense which represents the increase in the present value of the liability due to the passage of time. Such depreciation and accretion expenses are included in cost of goods sold for operating facilities and other operating expense for indefinitely closed facilities.

Our legal obligations related to asset retirement require us to: (i) reclaim lands disturbed by mining as a condition to receive permits to mine phosphate ore reserves; (ii) treat low pH process water in Gypstacks to neutralize acidity; (iii) close and monitor Gypstacks at our Florida and Louisiana facilities at the end of their useful lives; (iv) remediate certain other conditional obligations; (v) remove all surface structures and equipment, plug and abandon mine shafts, contour and revegetate, as necessary, and monitor for five years after closing our Carlsbad, New Mexico facility and (vi) decommission facilities, manage tailings and execute site reclamation at our Saskatchewan potash mines at the end of their useful lives. The estimated liability for these legal obligations is based on the estimated cost to satisfy the above obligations which is discounted using a credit-adjusted risk-free rate.

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A reconciliation of our AROs is as follows:

	Years Ended December 31,	
(in millions)	2016	2015
AROs, beginning of period	$841.6	$859.5
Liabilities incurred	28.0	26.1
Liabilities settled	(67.4)	(93.2)
Accretion expense	40.4	32.4
Revisions in estimated cash flows	5.8	6.9
Foreign currency translation	1.5	9.9
AROs, end of period	849.9	841.6
Less current portion	102.0	91.9
	$747.9	$749.7

Gypstack Closure Costs

A majority of our ARO relates to Gypstack Closure Costs. For financial reporting purposes, we recognize our estimated Gypstack Closure Costs at their present value. This present value determined for financial reporting purposes is reflected on our Consolidated Balance Sheets in accrued liabilities and other noncurrent liabilities. As of December 31, 2016, the present value of our Gypstack Closure Costs ARO reflected in our Consolidated Balance Sheet was approximately $527.1 million.

As discussed below, we have arrangements to provide financial assurance for the estimated Gypstack Closure Costs associated with our facilities in Florida and Louisiana.

EPA RCRA Initiative. On September 30, 2015, we and Mosaic Fertilizer, reached agreements with the U.S. Environmental Protection Agency ("EPA"), the U.S. Department of Justice ("DOJ"), the Florida Department of Environmental Protection ("FDEP") and the Louisiana Department of Environmental Quality (the "LDEQ") on the terms of two consent decrees to resolve claims relating to our management of certain waste materials onsite at our Riverview, New Wales, Mulberry, Green Bay, South Pierce and Bartow fertilizer manufacturing facilities in Florida and our Faustina and Uncle Sam facilities in Louisiana. This followed a 2003 announcement by the EPA Office of Enforcement and Compliance Assurance that it would be targeting facilities in mineral processing industries, including phosphoric acid producers, for a thorough review under the U.S. Resource Conservation and Recovery Act ("RCRA") and related state laws. As discussed below, a separate consent decree was previously entered into with EPA and the FDEP with respect to RCRA compliance at the Plant City, Florida phosphate concentrates facility (the "Plant City Facility") that we acquired as part of the CF Phosphate Assets Acquisition.

The consent decrees (collectively, the "2015 Consent Decrees") became effective on August 5, 2016 and require the following:

- Payment of a cash penalty of approximately $8 million, in the aggregate, which was made in August 2016.
- Payment of up to $2.2 million to fund specific environmental projects unrelated to our facilities, of which approximately $1.0 million was paid in August 2016.
- Modification of certain operating practices and undertaking certain capital improvement projects over a period of several years that are expected to result in capital expenditures likely to exceed $200 million in the aggregate.
- Provision of additional financial assurance for the estimated Gypstack Closure Costs for Gypstacks at the covered facilities. The RCRA Trusts are discussed below and in Note 11 to our Consolidated Financial Statements. We are also required to issue a $50 million letter of credit in 2017 to further support our financial assurance obligations under the Florida 2015 Consent Decree. In addition, we have agreed to guarantee the difference between the amounts held in each RCRA Trust (including any earnings) and the estimated closure and long-term care costs.

As of December 31, 2016, the undiscounted amount of our Gypstack Closure Costs ARO associated with the facilities covered by the 2015 Consent Decrees, determined using the assumptions used for financial reporting purposes, was

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approximately $1.4 billion and the present value of our Gypstack Closure Costs ARO reflected in our Consolidated Balance Sheet for those facilities was approximately $414 million.
In August 2016 we deposited cash, in the total amount of $630 million, into the RCRA Trusts to provide financial assurance as required under the 2015 Consent Decrees. The amount deposited corresponds to a material portion of our estimated Gypstack Closure Costs ARO associated with the covered facilities. While our actual Gypstack Closure Costs are generally expected to be paid by us in the normal course of our Phosphates business over a period that may not end until three decades or more after a Gypstack has been closed, the funds on deposit in the RCRA Trusts can be drawn by the applicable governmental authority in the event we cannot perform our closure and long term care obligations. If and when our estimated Gypstack Closure Costs with respect to the facilities associated with a RCRA Trust are sufficiently lower than the amount on deposit in that RCRA Trust, we have the right to request that the excess funds be released to us. The same is true for the RCRA Trust balance remaining after the completion of our obligations, which will be performed over a period that may not end until three decades or more after a Gypstack has been closed. At December 31, 2016 and 2015, amounts reserved to be held or held in the RCRA Trusts (including losses or reinvested earnings) are included in other assets on our Condensed Consolidated Balance Sheets.
Plant City and Bonnie Facilities. As part of the CF Phosphate Assets Acquisition, we assumed certain ARO related to Gypstack Closure Costs at both the Plant City Facility and a closed Florida phosphate concentrates facility in Bartow, Florida (the “Bonnie Facility”) that we acquired. Associated with these assets are two related financial assurance arrangements for which we became responsible and that provide financial assurance for the estimated Gypstack Closure Costs for these facilities, pursuant to federal or state law, which the government can utilize in the event we cannot perform such closure activities. One arrangement was initially a trust (the “Plant City Trust”) established to meet the requirements under a consent decree with EPA and the FDEP with respect to RCRA compliance at Plant City that also satisfies Florida financial assurance requirements at that site. The other is a trust fund (the “Bonnie Facility Trust”) established to meet the requirements under Florida financial assurance regulations (the “Florida Financial Assurance Requirement”) that apply to the Bonnie Facility. In the CF Phosphate Assets Acquisition, we deposited $189.2 million into the Plant City Trust as a substitute for funds that CF had deposited into trust. Based on our updated closure cost estimates, an additional $8.7 million was subsequently added to the Plant City Trust. In addition, in July 2014, the FDEP approved our funding of $14.5 million into the Bonnie Facility Trust, which substituted funds that CF had deposited into an escrow account. We have since deposited an additional $6 million at various times into the Bonnie Facility Trust. Both financial assurance funding obligations require estimates of future expenditures that could be impacted by refinements in scope, technological developments, new information, cost inflation, changes in regulations, discount rates and the timing of activities. We also are permitted to satisfy our financial assurance obligations with respect to the Bonnie and Plant City Facilities by means of alternative credit support, including surety bonds or letters of credit. In September 2016 we arranged for the delivery of a surety bond to EPA in the face amount of approximately $260 million (the “Plant City Bond”), reflecting our updated closure cost estimates, as a substitute for the financial assurance provided through the Plant City Trust. Approximately $200 million previously held in the Plant City Trust, was returned to us and became unrestricted cash. Under our current approach to satisfying applicable requirements, additional financial assurance would be required in the future if increases in cost estimates exceed the face amount of the Plant City Bond or the amount held in the Bonnie Facility Trust.
At December 31, 2016, the aggregate amount of ARO associated with the Plant City and Bonnie Facilities that was included in our consolidated balance sheet was $93.5 million. The aggregate amount represented by the Plant City Bond exceeds the aggregate amount of ARO associated with that Facility because the amount of financial assurance we are required to provide represents the aggregate undiscounted estimated amount to be paid by us in the normal course of our Phosphates business over a period that may not end until three decades or more after the Gypstack has been closed, whereas the ARO included in our Consolidated Balance Sheet reflects the discounted present value of those estimated amounts.
As part of the acquisition, we also assumed ARO related to land reclamation.
14. ACCOUNTING FOR DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES
We periodically enter into derivatives to mitigate our exposure to foreign currency risks, interest rate movements and the effects of changing commodity and freight prices. We record all derivatives on the Consolidated Balance Sheets at

fair value. The fair value of these instruments is determined by using quoted market prices, third party comparables, internal estimates or other external pricing sources. We net our derivative asset and liability positions when we have a master netting arrangement in place. Changes in the fair value of the foreign currency, interest rates, commodity, and freight derivatives are immediately recognized in earnings. As of December 31, 2016 and 2015, the gross asset position of our derivative instruments was $16.2 million and $6.8 million, respectively, and the gross liability position of our liability instruments was $17.3 million and $79.3 million, respectively.

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We do not apply hedge accounting treatments to our foreign currency exchange contracts, commodities contracts, or freight contracts. Unrealized gains and (losses) on foreign currency exchange contracts used to hedge cash flows related to the production of our product are included in cost of goods sold in the Consolidated Statements of Earnings. Unrealized gains and (losses) on commodities contracts and certain forward freight agreements are also recorded in cost of goods sold in the Consolidated Statements of Earnings. Unrealized gains or (losses) on foreign currency exchange contracts used to hedge cash flows that are not related to the production of our products are included in the foreign currency transaction gain (loss) line in the Consolidated Statements of Earnings in our Corporate, Eliminations and Other segment.

We apply fair value hedge accounting treatment to our fixed-to-floating interest rate contracts. Under these arrangements, we agree to exchange, at specified intervals, the difference between fixed and floating interest amounts calculated by reference to an agreed-upon notional principal amount. The mark-to-market of these fair value hedges is recorded as gains or losses in interest expense and is offset by the gain or loss of the underlying debt instrument, which also is recorded in interest expense. These fair value hedges are highly effective and, thus, as of December 31, 2016, the impact on earnings due to hedge ineffectiveness was immaterial. Consistent with Mosaic's intent to have floating rate debt as a portion of its outstanding debt, in December 2016, we entered into four fixed-to-floating interest rate swap agreements with a total notional amount of $310.0 million, related to our Senior Notes due 2023. The open position for interest rate swap agreements had a total notional amount of $175.0 million as of December 31, 2015.

In December 2016, we entered into forward starting interest rate swap agreements to hedge our exposure to changes in future interest rates related to an anticipated debt issuance to fund the cash portion of our planned acquisition of Vale Fertilizantes S.A. as described in Note 24. We do not apply hedge accounting treatment to these contracts and cash is expected to be settled at the time of pricing of the related debt. As of December 31, 2016, our total notional amount was $100.0 million. The impact of these agreements on earnings was immaterial as of December 31, 2016.

The following is the total absolute notional volume associated with our outstanding derivative instruments:

(in millions of Units)

Instrument	Derivative Category	Unit of Measure	December 31, 2016	December 31, 2015
Foreign currency derivatives	Foreign Currency	US Dollars	949.9	1,230.6
Interest rate derivatives	Interest Rate	US Dollars	410.0	175.0
Natural gas derivatives	Commodity	MMbtu	21.7	32.4

Credit-Risk-Related Contingent Features

Certain of our derivative instruments contain provisions that require us to post collateral. These provisions also state that if our debt were to be rated below investment grade, certain counterparties to the derivative instruments could request full collateralization on derivative instruments in net liability positions. The aggregate fair value of all derivative instruments with credit-risk-related contingent features that were in a liability position as of December 31, 2016 and 2015 was $6.0 million and $53.4 million, respectively. We have not posted cash collateral in the normal course of business associated with these contracts. If the credit-risk-related contingent features underlying these agreements were triggered on December 31, 2016, we would be required to post an additional $5.3 million of collateral assets, which are either cash or U.S. Treasury instruments, to the counterparties.

Counterparty Credit Risk

We enter into foreign exchange, interest rate and certain commodity derivatives, primarily with a diversified group of highly rated counterparties. We continually monitor our positions and the credit ratings of the counterparties involved and limit the amount of credit exposure to any one party. While we may be exposed to potential losses due to the credit risk of non-performance by these counterparties, losses are not anticipated. We closely monitor the credit risk associated with our counterparties and customers and to date have not experienced material losses.

15. FAIR VALUE MEASUREMENTS

Following is a summary of the valuation techniques for assets and liabilities recorded in our Consolidated Balance Sheets at fair value on a recurring basis:

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Foreign Currency Derivatives—The foreign currency derivative instruments that we currently use are forward contracts and zero-cost collars, which typically expire within eighteen months. Most of the valuations are adjusted by a forward yield curve or interest rates. In such cases, these derivative contracts are classified within Level 2. Some valuations are based on exchange-quoted prices, which are classified as Level 1. Changes in the fair market values of these contracts are recognized in the Consolidated Financial Statements as a component of cost of goods sold in our Corporate, Eliminations and Other segment, or foreign currency transaction (gain) loss. As of December 31, 2016 and 2015, the gross asset position of our foreign currency derivative instruments was $8.3 million and $5.7 million, respectively, and the gross liability position of our foreign currency derivative instruments was $14.6 million and $59.6 million, respectively.

Commodity Derivatives—The commodity contracts primarily relate to natural gas. The commodity derivative instruments that we currently use are forward purchase contracts, swaps, and three-way collars. The natural gas contracts settle using NYMEX futures or AECO price indexes, which represent fair value at any given time. The contracts' maturities are for future months and settlements are scheduled to coincide with anticipated gas purchases during those future periods. Quoted market prices from NYMEX and AECO are used to determine the fair value of these instruments. These market prices are adjusted by a forward yield curve and are classified within Level 2. Changes in the fair market values of these contracts are recognized in the Consolidated Financial Statements as a component of cost of goods sold in our Corporate, Eliminations and Other segment. As of December 31, 2016 and 2015, the gross asset position of our commodity derivative instruments was $6.3 million and $1.0 million, respectively, and the gross liability position of our commodity derivative instruments was $1.3 million and $16.7 million, respectively.

Interest Rate Derivatives—We manage interest expense through interest rate contracts to convert a portion of our fixed-rate debt into floating-rate debt. We also enter into interest rate swap agreements to hedge our exposure to changes in future interest rates related to anticipated debt issuances. Valuations are based on external pricing sources and are classified as Level 2. Changes in the fair market values of these contracts are recognized in the Consolidated Financial Statements as a component of interest expense. As of December 31, 2016 and 2015, the gross asset position of our interest rate swap instruments was $1.6 million and $0.1 million, respectively, and the gross liability position of our interest rate swap instruments was $1.4 million and $0.2 million, respectively.

Financial Instruments

The carrying amounts and estimated fair values of our financial instruments are as follows:

	December 31,			
	2016		2015	
(in millions)	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Cash and cash equivalents	$673.1	$673.1	$1,276.3	$1,276.3
Accounts receivable	627.8	627.8	675.0	675.0
Accounts payable	471.8	471.8	520.6	520.6
Structured accounts payable arrangements	128.8	128.8	481.7	481.7
Short-term debt	0.1	0.1	25.5	25.5
Long-term debt, including current portion	3,818.1	3,854.8	3,811.2	3,860.4

For cash and cash equivalents, accounts receivable, accounts payable, structured accounts payable arrangements and short-term debt, the carrying amount approximates fair value because of the short-term maturity of those instruments. The fair value of long-term debt is estimated using quoted market prices for the publicly registered notes and debentures, classified as Level 1 and Level 2, respectively, within the fair value hierarchy, depending on the market liquidity of the debt. For information regarding the fair value of our marketable securities held in trusts, see Note 11 of our Notes to Consolidated Financial Statements.

16. GUARANTEES AND INDEMNITIES

We enter into various contracts that include indemnification and guarantee provisions as a routine part of our business activities. Examples of these contracts include asset purchase and sale agreements, surety bonds, financial assurances to regulatory agencies in connection with reclamation and closure obligations, commodity sale and purchase agreements, and

other types of contractual agreements with vendors and other third parties. These agreements indemnify counterparties for matters such as reclamation and closure obligations, tax liabilities, environmental liabilities, litigation and other matters, as well as breaches by Mosaic of representations, warranties and covenants set forth in these agreements. In many cases, we are essentially guaranteeing our own performance, in which case the guarantees do not fall within the scope of the accounting and disclosures requirements under U.S. GAAP.

Our more significant guarantees and indemnities are as follows:

Guarantees to Brazilian Financial Parties. From time to time, we issue guarantees to financial parties in Brazil for certain amounts owed the institutions by certain customers of Mosaic. The guarantees are for all or part of the customers' obligations. In the event that the customers default on their payments to the institutions and we would be required to perform under the guarantees, we have in most instances obtained collateral from the customers. We monitor the nonperformance risk of the counterparties and have noted no material concerns regarding their ability to perform on their obligations. The guarantees generally have a one-year term, but may extend up to two years or longer depending on the crop cycle, and we expect to renew many of these guarantees on a rolling twelve-month basis. As of December 31, 2016, we have estimated the maximum potential future payment under the guarantees to be $73.7 million. The fair value of our guarantees is immaterial to the Consolidated Financial Statements as of December 31, 2016 and 2015.

Guarantee of Payments. In November 2015 Mosaic entered into an agreement (as amended to date, the "Bridge Loan") to provide bridge funding to Gulf Marine Solutions, LLC ("GMS") to finance the purchase and construction of two articulated tug and barge units (the "ATBs") intended to transport anhydrous ammonia, primarily for Mosaic's operations. As of December 31, 2016, the Bridge Loan limit was $185 million. In January 2017, the parties agreed to increase the Bridge Loan limit to $235 million. GMS is a wholly owned subsidiary of Gulf Sulphur Services Ltd., LLLP ("Gulf Sulphur Services"), an entity in which Mosaic owns a 50% equity interest and which is operated by Mosaic's joint venture partner. Mosaic's joint venture partner is arranging for construction of the ATBs, utilizing funds borrowed from GMS, and will enter into a long-term transportation contract with a subsidiary of Mosaic to transport anhydrous ammonia. Beginning in the quarter ended December 31, 2015, we determined that Mosaic is the primary beneficiary of GMS, a variable interest entity, and we have consolidated GMS's balance sheet and statement of earnings within our consolidated financial statements in our Phosphates segment. During 2016, at Mosaic's instruction, Mosaic's joint venture partner notified the barge builder of its election under the construction contract to cancel construction of the second barge unit, resulting in a charge of $43.5 million that is included in other operating expense. Construction of the first barge unit and the two tugs will continue as planned. At December 31, 2016, $176.0 million was outstanding under the Bridge Loan, and GMS had received additional loans from Gulf Sulphur Services in the aggregate amount of $53.7 million for the ATB project that are included in long-term debt in our Consolidated Balance Sheets. These loans obtained by GMS were in turn lent to Mosaic's joint venture partner for use in constructing the ATBs. The parties are seeking third-party financing for the ATB project, with proceeds to be utilized to repay outstanding Bridge Loans and loans from Gulf Sulphur Services. In connection with the ATB project, Mosaic has also agreed to guarantee up to $100 million of payment obligations to the barge builder. The guarantee will remain in effect until final payment under the construction agreement.

Other Indemnities. Our maximum potential exposure under other indemnification arrangements can range from a specified dollar amount to an unlimited amount, depending on the nature of the transaction. Total maximum potential exposure under these indemnification arrangements is not estimable due to uncertainty as to whether claims will be made or how they will be resolved. We do not believe that we will be required to make any material payments under these indemnity provisions.

Because many of the guarantees and indemnities we issue to third parties do not limit the amount or duration of our obligations to perform under them, there exists a risk that we may have obligations in excess of the amounts described above. For those guarantees and indemnities that do not limit our liability exposure, we may not be able to estimate what our liability would be until a claim is made for payment or performance due to the contingent nature of these arrangements. See Note 18 of our Notes to Consolidated Financial Statements for additional information for indemnification provisions related to the Cargill Transaction.

17. PENSION PLANS AND OTHER BENEFITS

We sponsor pension and postretirement benefits through a variety of plans including defined benefit plans, defined contribution plans, and postretirement benefit plans in North America and certain of our international locations. We reserve the right to amend, modify, or terminate the Mosaic sponsored plans at any time, subject to provisions of the Employee Retirement Income Security Act of 1974 ("ERISA"), prior agreements and our collective bargaining agreements.

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Defined Benefit and Postretirement Medical Benefit Plans

We sponsor various defined benefit pension plans in the U.S. and in Canada. Benefits are based on different combinations of years of service and compensation levels, depending on the plan. Generally, contributions to the U.S. plans are made to meet minimum funding requirements of ERISA, while contributions to Canadian plans are made in accordance with Pension Benefits Acts instituted by the provinces of Saskatchewan and Ontario. Certain employees in the U.S. and Canada, whose pension benefits exceed Internal Revenue Code and Canada Revenue Agency limitations, respectively, are covered by supplementary non-qualified, unfunded pension plans. In 2016, as part of an initiative to "de-risk" certain of its pension plan obligations, Mosaic offered a one-time lump-sum window to terminated vested participants within select plans who had not commenced distribution of their benefits. As a result of this initiative, there was a decrease of $43.3 million of projected benefit obligations for the defined benefit plans.

We provide certain health care benefit plans for certain retired employees ("Retiree Health Plans") which may be either contributory or non-contributory and contain certain other cost-sharing features such as deductibles and coinsurance. The Retiree Health Plans are unfunded and the projected benefit obligation was $44.9 million and $46.6 million as of December 31, 2016 and 2015, respectively. The related income statement effects of the Retiree Health Plans are not material to the Company.

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Accounting for Pension Plans

The year-end status of the North American pension plans was as follows:

	Pension Plans Years Ended December 31,	
(in millions)	2016	2015
Change in projected benefit obligation:		
Benefit obligation at beginning of period	$731.2	$828.4
Service cost	5.8	6.5
Interest cost	25.1	30.1
Actuarial (gain) loss	16.0	(20.1)
Currency fluctuations	9.7	(58.1)
Benefits paid	(84.9)	(56.2)
Plan Amendments	10.6	—
Liability loss due to curtailment/settlement	—	0.6
Projected benefit obligation at end of period	$713.5	$731.2
Change in plan assets:		
Fair value at beginning of period	$726.7	$812.1
Currency fluctuations	10.1	(57.6)
Actual return	52.2	15.5
Company contribution	11.5	12.9
Benefits paid	(84.9)	(56.2)
Fair value at end of period	$715.6	$726.7
Funded/(unfunded) status of the plans as of the end of period	$2.1	$(4.5)
Amounts recognized in the consolidated balance sheets:		
Noncurrent assets	$24.8	$23.5
Current liabilities	(0.7)	(0.7)
Noncurrent liabilities	(22.0)	(27.3)
Amounts recognized in accumulated other comprehensive (income) loss		
Prior service costs (credits)	$23.2	$13.9
Actuarial (gain) loss	109.6	110.1

The accumulated benefit obligation for the defined benefit pension plans was $712.1 million and $727.1 million as of December 31, 2016 and 2015, respectively.

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The components of net annual periodic benefit costs and other amounts recognized in other comprehensive income include the following components:

(in millions)	Pension Plans Years Ended December 31,		
	2016	2015	2014
Net Periodic Benefit Cost			
Service cost	$5.8	$6.5	$6.3
Interest cost	25.1	30.1	32.8
Expected return on plan assets	(44.9)	(46.9)	(44.0)
Amortization of:			
Prior service cost (credit)	1.7	1.6	1.9
Actuarial loss	5.0	6.2	4.7
Preliminary net periodic benefit cost (income)	$(7.3)	$(2.5)	$1.7
Curtailment/settlement expense	6.2	2.4	2.3
Special termination costs	—	—	5.4
Total net periodic benefit cost	$(1.1)	$(0.1)	$9.4
Other Changes in Plan Assets and Benefit Obligations Recognized in Other Comprehensive Income			
Prior service cost (credit) recognized in other comprehensive income	$8.9	$(1.7)	$(1.9)
Net actuarial loss (gain) recognized in other comprehensive income	(2.5)	3.4	53.3
Total recognized in other comprehensive income	$6.4	$1.7	$51.4
Total recognized in net periodic benefit (income) cost and other comprehensive income	$5.3	$1.6	$60.8

The estimated net actuarial (gain) loss and prior service cost (credit) for the pension plans and postretirement plans that will be amortized from accumulated other comprehensive income into net periodic benefit cost in 2017 is $4.9 million.

The following estimated benefit payments, which reflect estimated future service are expected to be paid by the related plans in the years ending December 31:

(in millions)	Pension Plans Benefit Payments	Other Postretirement Plans Benefit Payments	Medicare Part D Adjustments
2017	$ 39.8	$ 4.5	$ 0.3
2018	40.8	4.2	0.3
2019	41.9	3.9	0.2
2020	42.5	3.6	0.2
2021	43.4	3.3	0.2
2022-2026	221.9	13.2	0.7

In 2017, we expect to contribute cash of at least $19.6 million to the pension plans to meet minimum funding requirements. Also in 2017, we anticipate contributing cash of $4.5 million to the postretirement medical benefit plans to fund anticipated benefit payments.

Plan Assets and Investment Strategies

The Company's overall investment strategy is to obtain sufficient return and provide adequate liquidity to meet the benefit obligations of our pension plans. Investments are made in public securities to ensure adequate liquidity to support benefit payments. Domestic and international stocks and bonds provide diversification to the portfolio.

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For the U.S. plans, we utilize an asset allocation policy that seeks to maintain a fully funded plan status under the Pension Protection Act of 2006. As such, the primary investment objective beyond accumulating sufficient assets to meet future benefit obligations is to monitor and manage the liabilities of the plan to better insulate the portfolio from changes in interest rates that are impacting the liabilities. This requires an interest rate management strategy to reduce the sensitivity in the plan's funded status and having a portion of the plan's assets invested in return-seeking strategies. Currently, our policy includes a 75% allocation to fixed income and 25% to return-seeking strategies. Actual allocations may experience temporary fluctuations based on market movements and investment strategies.

For the Canadian pension plan the investment objectives for the pension plans' assets are as follows: (i) achieve a nominal annualized rate of return equal to or greater than the actuarially assumed investment return over ten to twenty-year periods; (ii) achieve an annualized rate of return of the Consumer Price Index plus 5% over ten to twenty-year periods; (iii) realize annual, three and five-year annualized rates of return consistent with or in excess of specific respective market benchmarks at the individual asset class level; and (iv) achieve an overall return on the pension plans' assets consistent with or in excess of the total fund benchmark, which is a hybrid benchmark customized to reflect the trusts' asset allocation and performance objectives. Currently, our policy includes a 40% allocation to fixed income and 60% to return-seeking strategies. Actual allocations may experience temporary fluctuations based on market movements and investment strategies.

A significant amount of the assets are invested in funds that are managed by a group of professional investment managers. These funds are mainly commingled funds. Performance is reviewed by Mosaic management monthly by comparing each fund's return to a benchmark with an in-depth quarterly review presented by the professional investment managers to the Global Pension Investment Committee. We do not have any significant concentrations of credit risk or industry sectors within the plan assets. Assets may be indirectly invested in Mosaic stock, but any risk related to this investment would be immaterial due to the insignificant percentage of the total pension assets that would be invested in Mosaic stock.

Fair Value Measurements of Plan Assets

The following tables provide fair value measurement, by asset class, of the Company's defined benefit plan assets for both the U.S. and Canadian plans:

(in millions)	December 31, 2016			
Pension Plan Asset Category	Total	Level 1	Level 2	Level 3
Cash	$10.7	$10.7	$—	$ —
Equity securities[(a)]	257.3	—	257.3	—
Fixed income[(b)]	443.5	—	443.5	—
Private equity funds	4.1	—	—	4.1
Total assets at fair value	$715.6	$10.7	$700.8	$ 4.1

(in millions)	December 31, 2015			
Pension Plan Asset Category	Total	Level 1	Level 2	Level 3
Cash	$9.2	$9.2	$—	$ —
Equity securities[(a)]	194.9	—	194.9	—
Fixed income[(b)]	514.9	—	514.9	—
Private equity funds	7.7	—	—	7.7
Total assets at fair value	$726.7	$9.2	$709.8	$ 7.7

(a) This class, which includes several funds, was invested approximately 44% in U.S. equity securities, 30% in Canadian equity securities, and 26% in international equity securities as of December 31, 2016, and 41% in U.S. equity securities, 32% in Canadian equity securities, and 27% in international equity securities as of December 31, 2015.

(b)

This class, which includes several funds, was invested approximately 61% in corporate debt securities, 37% in governmental securities in the U.S. and Canada, and 2% in foreign entity debt securities as of December 31, 2016, and 61% in corporate debt securities, 35% in governmental securities in the U.S. and Canada, and 4% in foreign entity debt securities as of December 31, 2015.

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Rates and Assumptions

The approach used to develop the discount rate for the pension and postretirement plans is commonly referred to as the yield curve approach. Under this approach, we use a hypothetical curve formed by the average yields of available corporate bonds rated AA and above and match it against the projected benefit payment stream. Each category of cash flow of the projected benefit payment stream is discounted back using the respective interest rate on the yield curve. Using the present value of projected benefit payments, a weighted-average discount rate is derived.

The approach used to develop the expected long-term rate of return on plan assets combines an analysis of historical performance, the drivers of investment performance by asset class, and current economic fundamentals. For returns, we utilized a building block approach starting with inflation expectations and added an expected real return to arrive at a long-term nominal expected return for each asset class. Long-term expected real returns are derived from future expectations of the U.S. Treasury real yield curve.

Weighted average assumptions used to determine benefit obligations were as follows:

	Pension Plans Years Ended December 31,		
	2016	2015	2014
Discount rate	3.97%	4.17%	3.95%
Expected return on plan assets	5.54%	5.66%	6.15%
Rate of compensation increase	3.50%	3.50%	3.50%

Weighted-average assumptions used to determine net benefit cost were as follows:

	Pension Plans Years Ended December 31,		
	2016	2015	2014
Discount rate	4.17%	3.95%	4.75%
Service cost discount rate [a]	4.19%	n/a	n/a
Interest cost discount rate [a]	3.45%	n/a	n/a